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University of California
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Agricultural Experiment Station
Berkeley, California

PROPOSALS FOR REORGANIZATION OF
BODEGA COOPERATIVE CREAMERY INCORPORATED
AND
POINT REYES DAIRYMEN'S ASSOCIATION

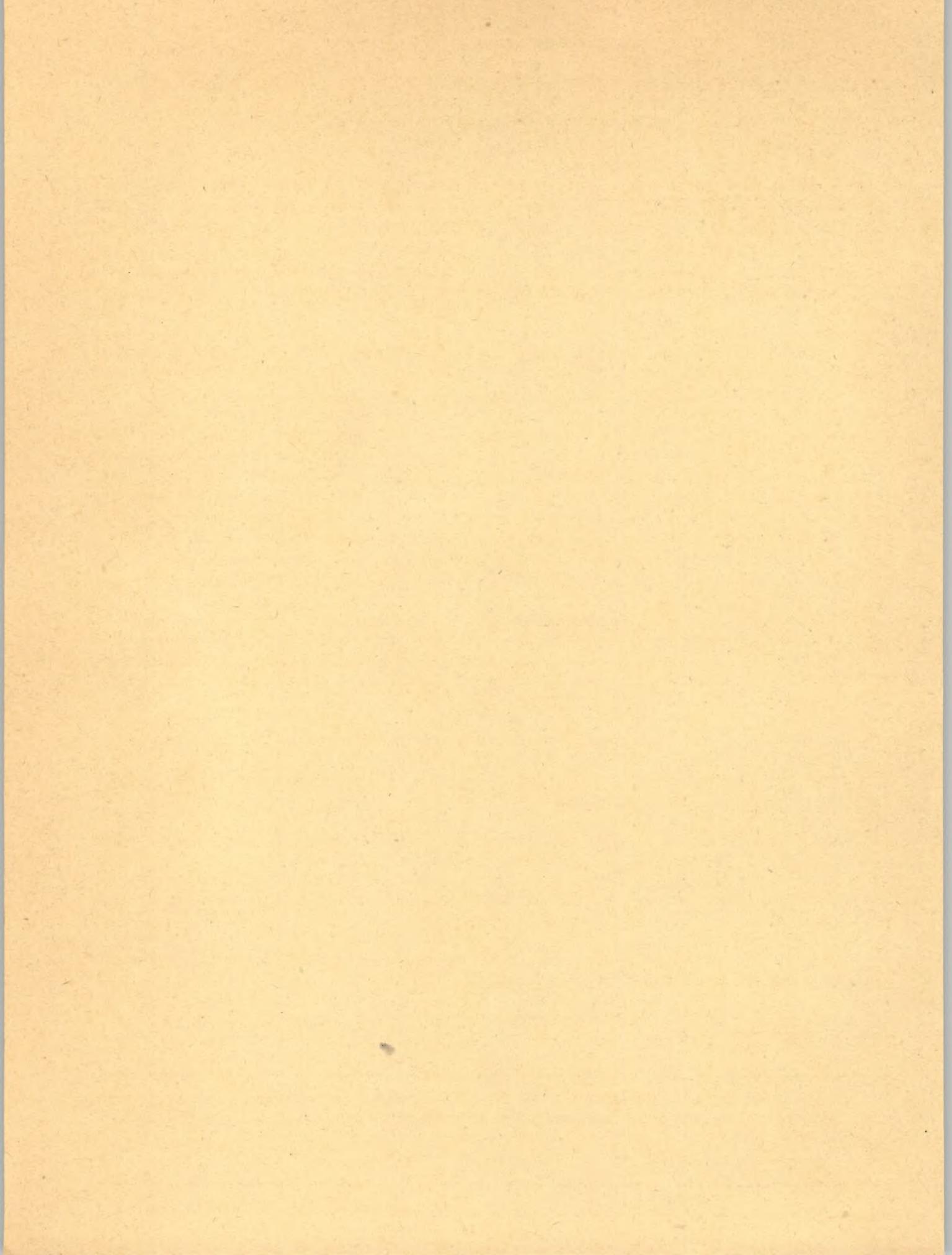
by

J. M. Tinley and K. D. Naden

March, 1946

Contribution from the
Giannini Foundation of Agricultural Economics
Mimeographed Report No. 86

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PROPOSALS FOR REORGANIZATION OF
BODEGA COOPERATIVE CREAMERY INCORPORATED AND POINT REYES DAIRYMEN'S ASSOCIATION

J. M. Tinley 1/ and K. D. Naden 2/

Reason and Purpose of Study.--Toward the end of 1945, the Challenge Cream and Butter Association of Los Angeles and the Berkeley Bank for Coöperatives requested the Giannini Foundation of Agricultural Economics, College of Agriculture, University of California, to undertake an analysis of the economic conditions under which the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association were operating, with a view to recommending possible plans for reorganization.

More than two decades ago these two associations were organized to manufacture coöperatively butter and other dairy products. The two plants are situated roughly fifty and thirty miles northeast of San Francisco. Since 1938, a large number of members of both associations have equipped themselves to ship market milk and market cream to the Alameda-Contra Costa market. This transition from the manufacturing of milk products to the shipping of market milk and market cream was accelerated during the war years -- so much so, that considerably less than half the volume of milkfat received by the associations in 1945 was used for manufacturing purposes. Moreover, an important volume of the manufacturing milk of both associations has been sold in unprocessed form to creameries in the East Bay cities and elsewhere. The volume of butter and dairy by-products handled has declined to such an extent that operating costs per unit have risen appreciably.

As a result, the two associations have been unable to pay to members returns comparable with those made to patrons by other creamery operators in the same territory. Moreover, considerable dissatisfaction has arisen among members who ship market milk, because they have been required to contribute toward the losses incurred in handling manufacturing milk.

The purpose of this study, therefore, was to ascertain:

1. To what extent the conditions under which these two associations were originally organized have changed.
2. Whether these changes in the economic environment and market outlets are likely to continue for any length of time.
3. How these changes have, and are likely to affect the operations of the two associations.
4. In the light of the information, to recommend one or more plans for the reorganization of the two associations.

Source of Data.--The information upon which this study is based was obtained from: (1) publications of the United States Department of Agriculture;

1/ Associate Professor of Agricultural Economics, Agricultural Economist in the Experiment Station, and Agricultural Economist on the Giannini Foundation.

2/ Research Assistant on the Giannini Foundation.

PROPOSALS FOR ORGANIZATION OF

BOSSES COOPERATIVE INSTITUTIONS AND POINT MILES ASSOCIATION

✓ 2nd May 1952 K. D. Patel

To the Sirs of Bharatpur, I beg to accept this paper.
The visitation has been for the purpose of the institution of the Co-operative Association of Agricultural Cooperatives to collect information on the present system and to advise on the adoption of a suitable system of organization to maintain a point miles system for the benefit of the members. It is proposed to submit a detailed report on the same to the members of the Board of Directors of the Cooperative Association of Bharatpur.

Some of business of the association will consist of retailing and sale of
other articles and so on. Accordingly, there has been a need to have a
new system of organization which will be able to maintain better
order and control over the association. It is proposed to have a
central body which will be responsible for the administration of the
association and will be able to maintain better control over the
activities of the association. It is proposed to have a central body which
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(2) annual dairy statistics reports of the California Department of Agriculture; (3) the records of the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association; and (4) interviews with members of the two associations, officials of the Challenge Cream and Butter Association, operators of other dairy processing plants in Marin and Sonoma counties, and with several persons familiar with the dairy industry in Central California.

Trends in the California Dairy Industry (1924-1945)

Trend in Population and Buying Power.--The bulk of dairy products produced in California has, and is being consumed in the state. The trend of population and of buying power in California is thus of considerable importance in influencing the manner in which milkfat and solids-not-fat are utilized.

Between 1924 and 1945 the population of California (excluding members of the armed forces) was just about doubled -- from 4,415,000 in 1924 to 8,823,000 in 1945 (table 1). This increase for California was far greater than that for the Western States and for the United States as a whole, for which the increases were 60.4 per cent and 23.5 per cent respectively.

Data indicating the trend of buying power in California are not available for the whole of the period 1924 to 1929. Data on income received by persons in California and in the United States, however, are available from 1929 on. These data, which reflect both increase in population and higher incomes per capita, indicate that the monetary value of incomes of people in California was just about the same in 1939 as in 1929, but that income increased nearly one and a half times between 1939 and 1944 (table 2). Total income in California increased at a much more rapid rate than did total income in the United States. Moreover, income per capita in California has consistently exceeded that of the United States.

These facts are important because experience and investigation have shown that consumption of dairy products per capita, and especially of the higher-priced commodities, such as market milk, market cream, and ice cream, tends to rise with increases in family income.

Trend in Number of Dairy Cows.--The number of dairy cows in California increased from 569,000 in 1924 to 775,000 in 1944, an increase of roughly 36 per cent (table 3). The rate of increase was somewhat greater than for the Western States and the United States, in which the increases were 25.6 per cent and 21.3 per cent, respectively.

The rate of increase in numbers of dairy cows in California was not as rapid as that for population. As a result, the number of dairy cows per hundred of population declined steadily, from 12.9 in 1924 to only 8.9 in 1944. In the United States, the number of dairy cows per hundred of population in 1944 was practically the same as in 1924, namely 18.8; in the Western States, the number had declined from 18.4 per hundred of population to 14.4. It is significant that the number of dairy cows per hundred of population in California has been consistently below that of the United States and the Western States. The disparity has become greater since 1924.

Trend in Output of Milkfat.--Production of milkfat in California increased from 127 million pounds in 1924 to 208 million in 1944 -- an increase of roughly 64 per cent (table 4). As the number of cows in the state has increased only 36 per cent, it is apparent that a material increase in output of milk per cow has occurred since 1924.

TABLE 1

Population of the United States, Western States,
and California

Year	Population (thousands)			Per cent change, 1924=100		
	United States	Western States	California	United States	Western States	California
1924	113,202	10,217	4,415	100.0	100.0	100.0
1925	114,867	10,509	4,634	101.5	102.9	105.0
1926	116,532	10,801	4,854	102.9	105.7	109.9
1927	118,197	11,093	5,073	104.4	108.6	114.9
1928	119,862	11,385	5,293	105.9	111.4	119.9
1929	121,516	11,677	5,513	107.3	114.3	124.9
1930	123,077	11,941	5,709	108.7	116.9	129.3
1931	124,039	12,122	5,824	109.6	118.6	131.9
1932	124,840	12,202	5,894	110.3	119.4	133.5
1933	125,578	12,330	5,963	110.9	120.7	135.1
1934	126,373	12,451	6,055	111.6	121.9	137.1
1935	127,250	12,686	6,175	112.4	124.2	139.9
1936	128,053	12,959	6,341	113.1	126.8	143.6
1937	128,824	13,253	6,528	113.8	129.7	147.9
1938	129,824	13,462	6,656	114.7	131.8	150.8
1939	130,879	13,680	6,785	115.6	133.9	153.7
1940	131,970	13,960	6,964	116.6	136.6	157.7
1941	133,203	14,283	7,228	117.7	139.8	163.7
1942	133,665	14,813	7,664	118.1	145.0	173.6
1943	136,497	16,151	8,468	120.6	158.1	191.8
1944	138,101	16,361	8,756	122.0	160.1	198.3
1945	139,800	16,385	8,823	123.5	160.4	199.8

Sources of data:

Compiled from U.S. Bur. of the Census. Annual Statistical Abstracts of the United States, and

U. S. Bureau of the Census. Estimated Population of the United States by states: 1940 to 1945. Washington, D.C., 1946. (Series P-46, no. 3)

Note: The data for the United States includes estimates of population in the armed forces; those for California do not.

TABLE 2
Income Payments, United States and California

Year	Total income (Million dollars)		Per cent change, 1929 =100	
	United States	California	United States	California
1929	82,617	5,217	100.0	100.0
1930	73,345	4,878	88.8	93.5
1931	61,990	4,151	75.0	79.6
1932	47,376	3,182	57.3	61.0
1933	46,273	3,113	56.0	59.7
1934	52,883	3,530	64.0	67.7
1935	58,496	3,904	70.8	74.8
1936	67,917	4,730	82.2	90.7
1937	72,200	5,047	87.4	96.7
1938	66,022	4,772	79.9	91.5
1939	70,601	5,047	85.4	96.7
1940	75,852	5,605	91.8	107.4
1941	92,269	7,044	111.7	135.0
1942	115,301	9,205	139.6	176.4
1943	138,853	12,035	168.1	230.7
1944	148,086	12,948	179.2	248.2

Source of Data:

U.S. Dept. of Com., Bur. of For. and Dom. Com. Survey of Current Business. Issues of July, 1942; Aug., 1944; and Aug., 1945.

TABLE 3

Number of Dairy Cows in the United States, Western States, and California

Year	Number of dairy cows (thousands)			per cent change, 1924=100			Number of cows per 100 population		
	United States	Western states	California	United States	Western States	California	United States	Western states	California
1924	21,417	1,881	569	100.0	100.0	100.0	18.9	18.4	12.9
1925	21,503	1,903	573	100.4	101.2	100.7	18.7	18.1	12.4
1926	21,312	1,918	591	99.5	101.9	103.9	18.3	17.7	12.2
1927	21,191	1,930	601	98.9	102.6	105.6	17.9	17.4	11.8
1928	21,223	1,943	603	99.1	103.3	106.0	17.7	17.1	11.4
1929	21,118	1,977	610	100.9	105.1	107.2	17.8	16.9	11.1
1930	22,218	2,011	611	103.7	106.9	107.4	18.1	16.8	10.7
1931	23,108	2,067	614	107.9	109.9	107.9	18.6	17.0	10.5
1932	24,105	2,120	624	112.5	112.7	109.7	19.3	17.4	10.6
1933	25,062	2,188	630	117.0	116.3	110.7	20.0	17.7	10.6
1934	25,198	2,188	624	117.7	116.3	109.7	19.9	17.6	10.3
1935	24,276	2,091	615	113.3	111.2	108.1	19.1	16.5	10.0
1936	23,988	2,071	630	112.0	110.1	110.7	18.7	16.0	9.9
1937	23,710	2,063	634	110.7	109.7	111.4	18.4	15.6	9.7
1938	23,717	2,060	632	110.7	109.5	111.1	18.3	15.3	9.5
1939	23,923	2,081	638	111.7	110.6	112.1	18.3	15.2	9.4
1940	24,276	2,125	651	113.3	113.0	114.4	18.4	15.2	9.3
1941	24,361	2,299	740	113.7	122.2	130.0	18.3	16.1	10.2
1942	25,167	2,310	754	117.5	122.8	132.5	18.8	15.6	9.8
1943	25,663	2,341	757	119.8	124.4	137.0	18.8	14.5	8.9
1944	25,982	2,363	775	121.3	125.6	136.2	18.8	14.4	8.9

Sources of data:

- (1) Farm Production, Disposition and Income from Milk. 1924-1940. U. S. D. A. Agr. Mktg. Service. May 1941.
- (2) Farm Production, Disposition and Income from Milk. 1940-1943. U. S. D. A. Bur. Agr. Econ. April 15, 1944.
- (3) Farm Production, Disposition and Income from Milk. 1943-44. U. S. D. A. Bur. Agr. Econ. April 16, 1945.

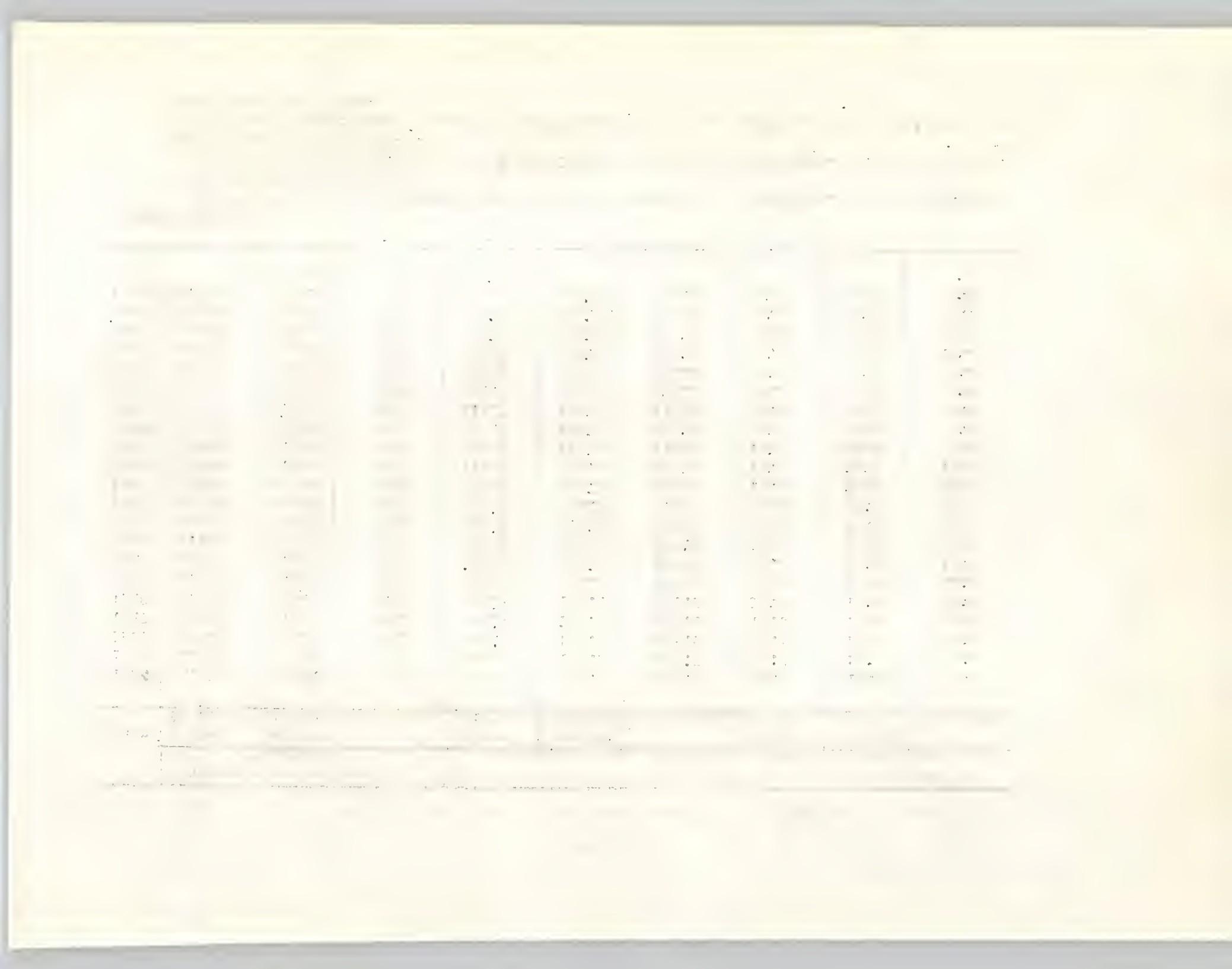


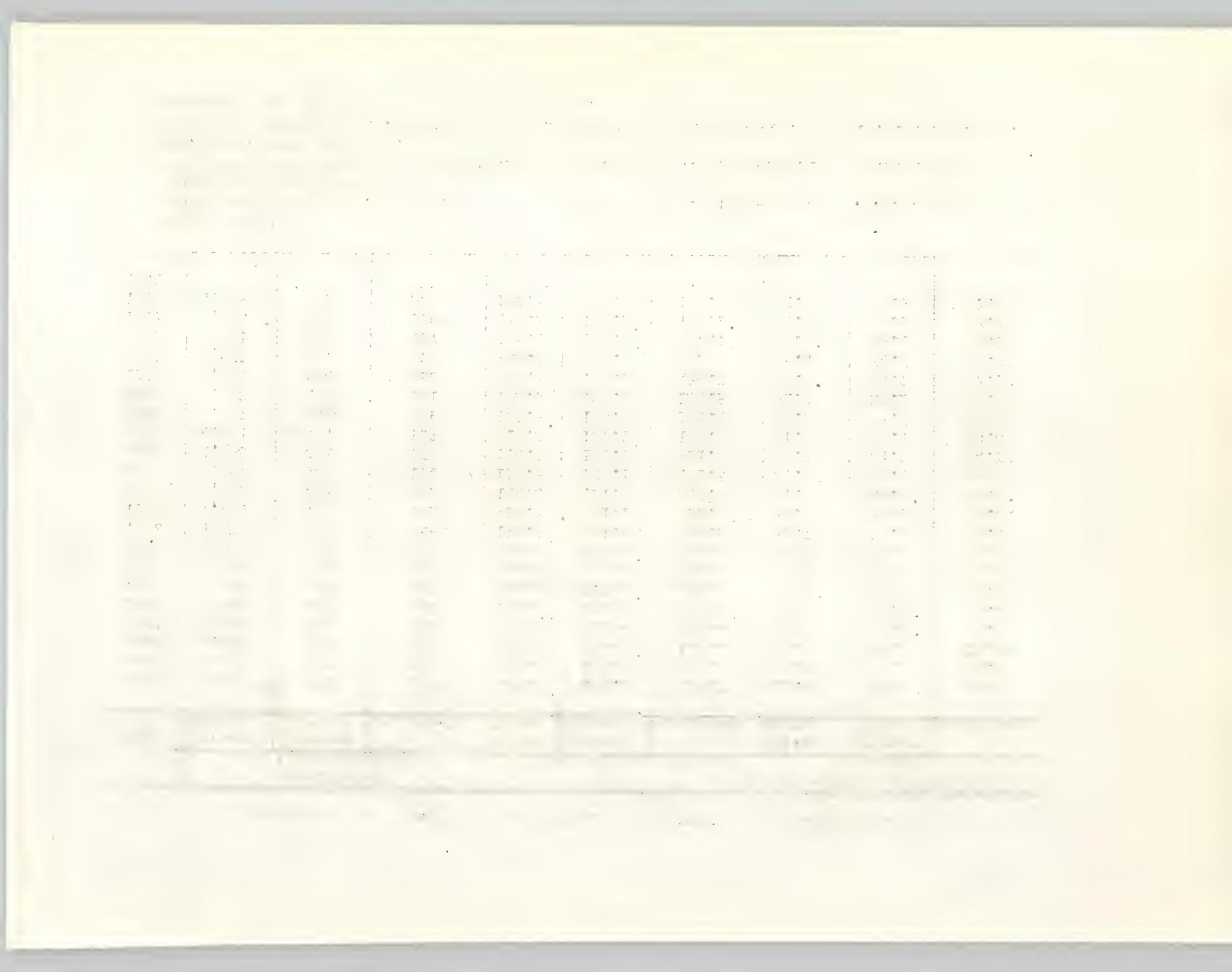
TABLE 4

Production of Milkfat in United States, Western States, and California

Year	Production (million Pounds)			Per cent change, 1924-100			Production per capita (Pounds)		
	United States	Western States	California	United States	Western States	California	United States	Western States	California
1924	3,495	365	127	100.0	100.0	100.0	30.9	35.7	28.8
1925	3,551	377	133	101.3	103.2	104.7	30.9	35.9	28.7
1926	3,659	383	130	104.7	104.9	102.4	31.3	35.5	26.8
1927	3,734	403	139	108.8	110.4	109.4	31.0	36.3	27.4
1928	3,762	407	140	107.6	111.5	110.2	31.4	36.7	26.4
1929	3,884	428	149	111.1	117.3	117.3	32.0	36.7	27.0
1930	3,929	438	152	112.4	110.0	119.7	31.9	36.7	26.6
1931	4,045	413	154	115.7	121.4	121.3	32.6	36.5	26.4
1932	4,079	414	156	116.7	121.6	122.8	32.7	36.4	26.5
1933	4,114	442	155	117.7	121.1	122.0	32.8	35.8	26.0
1934	3,996	443	153	114.3	121.4	120.5	31.6	35.6	25.3
1935	3,994	439	154	114.3	120.3	121.3	31.4	34.6	24.9
1936	4,056	443	154	116.0	121.4	121.3	31.7	34.2	24.3
1937	4,063	444	157	116.3	121.6	123.6	31.5	33.5	24.0
1938	4,227	454	159	120.9	124.4	125.2	32.6	33.7	23.9
1939	4,493	468	161	122.5	128.2	126.8	32.7	34.2	23.7
1940	4,379	484	166	125.3	132.6	130.7	33.2	34.7	23.8
1941	4,577	521	193	131.0	142.7	152.0	34.4	36.5	26.7
1942	4,731	539	197	135.4	147.7	155.1	35.4	36.4	25.6
1943	4,695	543	198	134.3	148.8	155.9	34.4	33.6	23.4
1944	4,728	555	208	135.3	152.0	163.8	34.2	33.9	23.8
1945									

Sources of data:

- (1) Farm Production, Disposition and Income from Milk. 1924-1940. U.S.D.A. Agr. Mktg. Service. May 1941.
- (2) Farm Production, Disposition and Income from Milk. 1940-1943. U.S.D.A. Bur. Agr. Econ. April 15, 1944.
- (3) Farm Production, Disposition and Income from Milk. 1943-44. U.S.D.A. Bur. Agr. Econ. April 16, 1945.



In the United States, the output of milkfat increased from 3,495 million pounds in 1924 to 4,728 million pounds in 1944 -- a rise of about 35 per cent. For the Western States, the increase was from 365 million pounds in 1924 to 555 million pounds in 1944 -- or about 52 per cent. It is thus apparent that milkfat production has risen more rapidly in California than in the United States, as a whole, or in the Western States.

However, in view of the very rapid increase in the population of California, especially since 1940, the output of milkfat per capita in California has shown a persistent decline since 1924 -- a decline from 28.8 pounds per capita in 1924 to 23.8 pounds in 1944. In contrast, output of milkfat per capita in the United States, which has been consistently above that of California, increased from 30.9 pounds in 1924 to 34.2 pounds in 1944. In the Western States there was a small decline in output per capita -- from 35.7 pounds in 1924 to 33.9 pounds in 1944. However, the average in 1944 for the Western States was just about the same as for the United States.

It is possible to conclude from these data that California, which, because of its high per capita income, should have a per capita consumption of dairy products above the national level, has been progressively less able to meet its consumption requirements out of its own production of milkfat. Under the circumstances, it is to be expected that an increasing proportion of milk and milkfat produced in the state will be used in market milk, market cream, ice cream, and cottage cheese -- products which, for several reasons, are not imported in large volume from other states. As a corollary, it is to be expected that output of certain types of manufactured dairy products -- especially butter -- will have shown a consistent tendency to decline, both absolutely and relatively -- consumption needs for these products being met by a progressive increase in imports from other states.

It is also to be expected that the long-time trends in utilization of milk and milkfat will have been accelerated in some directions and modified in others, because of the impact of the war production programs.

Production of Dairy Products.--Practically all the milkfat produced in California is used in: (1) butter, (2) market milk, (3) market cream, (4) evaporated and condensed milk, (5) cheese, (6) ice cream, (7) ice milk, (8) whole milk powder, and (9) cottage cheese. An analysis of the output of each of these products justifies the broad conclusions arrived at in regard to output of milkfat (tables 5 and 6, and figure 1).

(1) Butter. During the years 1924-1934 the production of butter in California averaged 74.8 million pounds annually; from 1935-1941, it averaged 65.5 million pounds. Since 1942, however, butter production has declined precipitously, and in 1945 it averaged only about 15 million pounds, or one fifth the volume produced during the period 1924-1934.

The decline in output of butter per capita is even more marked. In 1924 California produced about 18 pounds of butter per capita. From then on, output per capita declined more or less steadily to 13 pounds in 1930, to 10 pounds in 1940, and then precipitately to only about 1.8 pounds in 1945.

Even in 1924, butter production in California was inadequate to meet consumption needs, and some 20.0 million pounds had to be imported from other states. The shipments of butter into California increased steadily to 31.6 million pounds

TABLE 5
Production of Lairy Products in California

Year	Butter (1,000 pounds)	Market milk (1,000 gallons)	Market Cream (1,000 gallons)	Evaporated and Condensed milk (1,000 pounds)	Cheese (1,000 pounds)	Ice cream (1,000 gallons)	Ice milk (1,000 gallons)	Powdered whole milk (1,000 pounds)	Cottage cheese (1,000 pounds)
1924	78,562	92,470	3,992	120,311	7,918	9,059	23	315	3,233
1925	73,600	101,706	5,766	138,991	7,408	11,456	150	768	10,052
1926	74,118	108,362	5,905	150,063	8,119	12,097	133	405	11,73
1927	77,325	123,177	6,128	183,946	8,959	12,079	203	219	13,504
1928	76,786	128,827	6,525	175,386	9,604	14,057	210	357	18,673
1929	72,806	132,000	7,075	189,062	9,229	15,378	269	395	17,718
1930	73,972	131,774	7,389	210,240	9,813	14,278	390	407	17,958
1931	72,880	132,419	7,605	203,833	10,097	13,547	462	429	16,525
1932	73,854	127,857	6,670	218,456	11,995	10,086	1,803	465	12,291
1933	77,406	122,104	6,019	235,694	16,600	8,784	3,093	618	12,386
1934	70,986	128,155	5,993	216,542	15,938	11,168	3,524	712	13,276
1935	64,144	133,442	6,510	225,516	15,885	12,666	5,471	842	15,225
1936	64,341	146,223	7,013	219,691	16,182	15,665	7,191	626	18,043
1937	65,192	149,024	7,349	188,802	17,171	16,205	6,635	429	17,788
1938	67,082	151,829	7,871	201,783	17,086	16,564	5,924	641	24,718
1939	65,254	164,631	8,504	236,536	15,381	19,501	6,569	843	30,305
1940	69,865	173,464	8,897	270,857	15,489	20,360	6,851	1,588	25,076
1941	62,636	186,035	8,751	354,441	17,067	23,548	7,401	2,898	25,302
1942	49,412	219,668	7,308	328,019	17,105	30,826	7,660	9,276	25,693
1943	37,523	267,504	3,313	314,454	16,651	30,836	5,359	12,683	26,009
1944	29,466	288,588	4,040	379,946	13,235	34,323	4,248	*/	29,451
1/1945	15,431	329,800	*/	397,354	13,512	38,285	5,074	*/	35,004

*/ Not available.

£/ Preliminary.

Source of data:

California State Dept. Agr. Annual Statistical Reports of California Dairy Products.
Sacramento. 1924 to 1944.



TABLE 6
Annual Per Capita Production of Dairy Products in California

Year	Butter (pounds)	Market Milk (gallons)	Market cream (gallons)	Evaporated milk (pounds)	Cheese (pounds)	Ice cream (gallons)	Ice milk (gallons)	Whole Milk Powder (pounds)	Cottage cheese (pounds)
1924	17.79	20.94	0.90	27.25	1.80	2.05	0.01	0.07	.73
1925	16.88	21.95	1.24	29.99	1.60	2.47	0.03	0.17	2.17
1926	16.27	22.32	1.22	30.92	1.67	2.49	0.03	0.08	2.28
1927	15.24	24.28	1.21	36.26	1.77	2.58	0.04	0.04	2.66
1928	14.51	24.34	1.23	33.14	1.81	2.66	0.04	0.07	3.53
1929	13.21	23.94	1.28	34.29	1.67	2.79	0.05	0.07	3.21
1930	12.96	23.08	1.29	35.07	1.72	2.50	0.07	0.07	3.15
1931	12.51	22.74	1.31	35.00	1.73	2.33	0.08	0.07	2.84
1932	12.53	21.69	1.13	37.06	2.03	1.71	0.31	0.08	2.09
1933	12.98	20.48	1.01	39.53	2.78	1.47	0.52	0.10	2.08
1934	11.72	21.17	0.99	35.76	2.63	1.84	0.58	0.12	2.19
1935	10.39	21.61	1.05	36.52	2.57	2.05	0.89	0.14	2.46
1936	10.16	23.06	1.11	34.65	2.56	2.47	1.13	0.10	2.85
1937	9.99	22.83	1.13	28.92	2.63	2.48	1.02	0.07	2.72
1938	10.08	22.81	1.18	30.32	2.57	2.49	0.89	0.10	3.71
1939	9.52	24.26	1.25	34.86	2.27	2.87	0.97	0.12	4.47
1940	10.03	24.91	1.28	38.89	2.23	2.92	0.98	0.23	3.60
1941	8.66	25.72	1.21	49.00	2.36	3.26	1.02	0.40	3.50
1942	6.43	28.59	0.95	42.69	2.23	4.01	1.00	1.21	3.34
1943	4.43	31.59	0.39	37.13	1.97	3.64	0.63	1.50	3.07
1944	3.37	32.99	0.46	43.44	1.51	3.93	0.49	*/	3.37

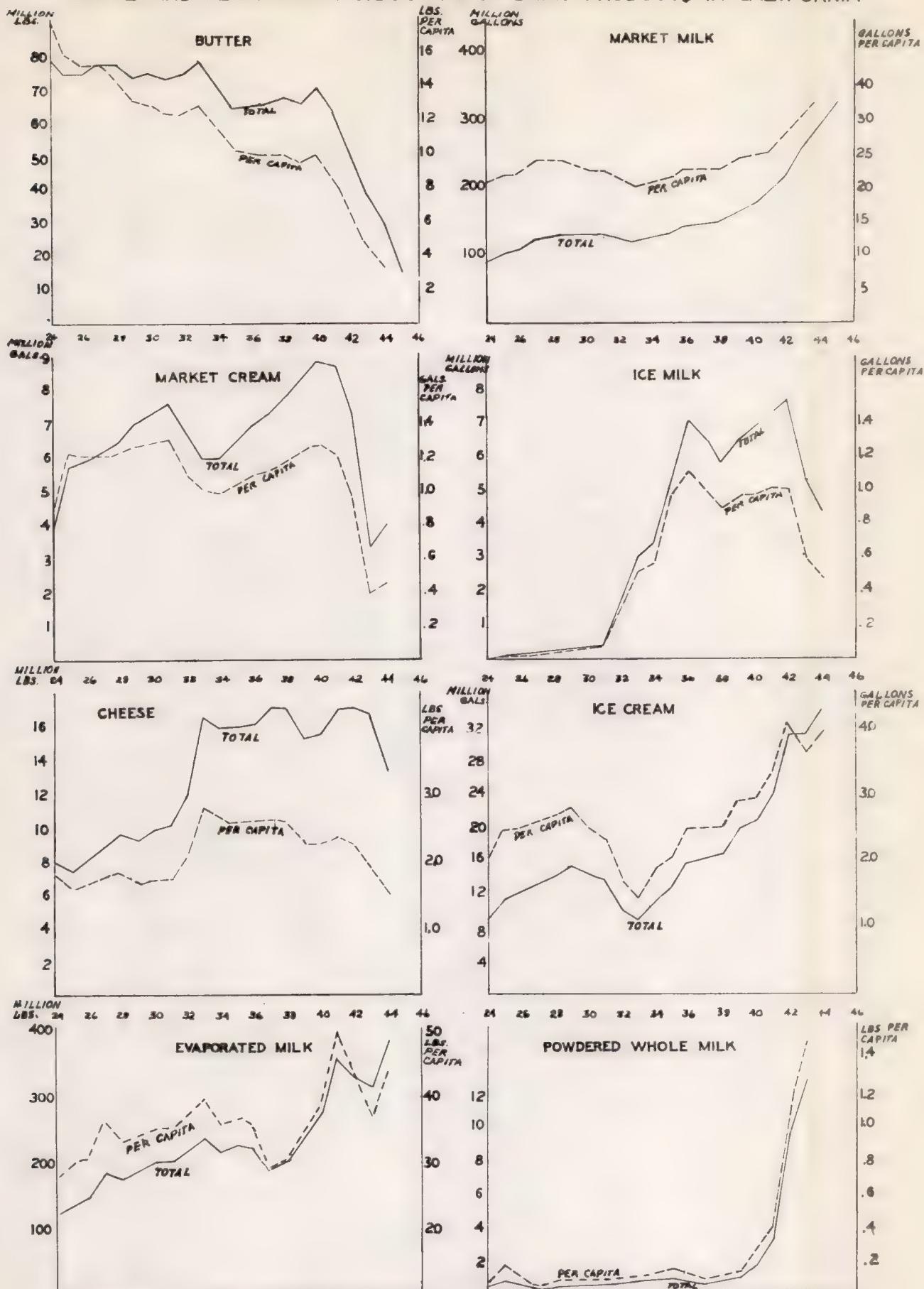
*/ Not available.

Source of data:

Compiled by authors from data in tables 1 and 5.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 8010 | 8011 | 8012 | 8013 | 8014 | 8015 | 8016 | 8017 | 8018 | 8019 | 8020 | 8021 | 8022 | 8023 | 8024 | 8025 | 8026 | 8027 | 8028 | 8029 | 8030 | 8031 | 8032 | 8033 | 8034 | 8035 | 8036 | 8037 | 8038 | 8039 | 8040 | 8041 | 8042 | 8043 | 8044 | 8045 | 8046 | 8047 | 8048 | 8049 | 8050 | 8051 | 8052 | 8053 | 8054 | 8055 | 8056 | 8057 | 8058 | 8059 | 8060 | 8061 | 8062 | 8063 | 8064 | 8065 | 8066 | 8067 | 8068 | 8069 | 8070 | 8071 | 8072 | 8073 | 8074 | 8075 | 8076 | 8077 | 8078 | 8079 | 8080 | 8081 | 8082 | 8083 | 8084 | 8085 | 8086 | 8087 | 8088 | 8089 | 80810 | 80811 | 80812 | 80813 | 80814 | 80815 | 80816 | 80817 | 80818 | 80819 | 80820 | 80821 | 80822 | 80823 | 80824 | 80825 | 80826 | 80827 | 80828 | 80829 | 80830 | 80831 | 80832 | 80833 | 80834 | 80835 | 80836 | 80837 | 80838 | 80839 | 80840 | 80841 | 80842 | 80843 | 80844 | 80845 | 80846 | 80847 | 80848 | 80849 | 80850 | 80851 | 80852 | 80853 | 80854 | 80855 | 80856 | 80857 | 80858 | 80859 | 80860 | 80861 | 80862 | 80863 | 80864 | 80865 | 80866 | 80867 | 80868 | 80869 | 80870 | 80871 | 80872 | 80873 | 80874 | 80875 | 80876 | 80877 | 80878 | 80879 | 80880 | 80881 | 80882 | 80883 | 80884 | 80885 | 80886 | 80887 | 80888 | 80889 | 80890 | 80891 | 80892 | 80893 | 80894 | 80895 | 80896 | 80897 | 80898 | 80899 | 80900 | 80901 | 80902 | 80903 | 80904 | 80905 | 80906 | 80907 | 80908 | 80909 | 80910 | 80911 | 80912 | 80913 | 80914 | 80915 | 80916 | 80917 | 80918 | 80919 | 80920 | 80921 | 80922 | 80923 | 80924 | 80925 | 80926 | 80927 | 80928 | 80929 | 80930 | 80931 | 80932 | 80933 | 80934 | 80935 | 80936 | 80937 | 80938 | 80939 | 80940 | 80941 | 80942 | 80943 | 80944 | 80945 | 80946 | 80947 | 80948 | 80949 | 80950 | 80951 | 80952 | 80953 | 80954 | 80955 | 80956 | 80957 | 80958 | 80959 | 80960 | 80961 | 80962 | 80963 | 80964 | 80965 | 80966 | 80967 | 80968 | 80969 | 80970 | 80971 | 80972 | 80973 | 80974 | 80975 | 80976 | 80977 | 80978 | 80979 | 80980 | 80981 | 80982 | 80983 | 80984 | 80985 | 80986 | 80987 | 80988 | 80989 | 80990 | 80991 | 80992 | 80993 | 80994 | 80995 | 80996 | 80997 | 80998 | 80999 | 809100 | 809101 | 809102 | 809103 | 809104 | 809105 | 809106 | 809107 | 809108 | 809109 | 809110 | 809111 | 809112 | 809113 | 809114 | 809115 | 809116 | 809117 | 809118 | 809119 | 809120 | 809121 | 809122 | 809123 | 809124 | 809125 | 809126 | 809127 | 809128 | 809129 | 809130 | 809131 | 809132 | 809133 | 809134 | 809135 | 809136 | 809137 | 809138 | 809139 | 809140 | 809141 | 809142 | 809143 | 809144 | 809145 | 809146 | 809147 | 809148 | 809149 | 809150 | 809151 | 809152 | 809153 | 809154 | 809155 | 809156 | 809157 | 809158 | 809159 | 809160 | 809161 | 809162 | 809163 | 809164 | 809165 | 809166 | 809167 | 809168 | 809169 | 809170 | 809171 | 809172 | 809173 | 809174 | 809175 | 809176 | 809177 | 809178 | 809179 | 809180 | 809181 | 809182 | 809183 | 809184 | 809185 | 809186 | 809187 | 809188 | 809189 | 809190 | 809191 | 809192 | 809193 | 809194 | 809195 | 809196 | 809197 | 809198 | 809199 | 809200 | 809201 | 809202 | 809203 | 809204 | 809205 | 809206 | 809207 | 809208 | 809209 | 809210 | 809211 | 809212 | 809213 | 809214 | 809215 | 809216 | 809217 | 809218 | 809219 | 809220 | 809221 | 809222 | 809223 | 809224 | 809225 | 809226 | 809227 | 809228 | 809229 | 809230 | 809231 | 809232 | 809233 | 809234 | 809235 | 809236 | 809237 | 809238 | 809239 | 809240 | 809241 | 809242 | 809243 | 809244 | 809245 | 809246 | 809247 | 809248 | 809249 | 809250 | 809251 | 809252 | 809253 | 809254 | 809255 | 809256 | 809257 | 809258 | 809259 | 809260 | 809261 | 809262 | 809263 | 809264 | 809265 | 809266 | 809267 | 809268 | 809269 | 809270 | 809271 | 809272 | 809273 | 809274 | 809275 | 809276 | 809277 | 809278 | 809279 | 809280 | 809281 | 809282 | 809283 | 809284 | 809285 | 809286 | 809287 | 809288 | 809289 | 809290 | 809291 | 809292 | 809293 | 809294 | 809295 | 809296 | 809297 | 809298 | 809299 | 809300 | 809301 | 809302 | 809303 | 809304 | 809305 | 809306 | 809307 | 809308 | 809309 | 809310 | 809311 | 809312 | 809313 | 809314 | 809315 | 809316 | 809317 | 809318 | 809319 | 809320 |<th
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TOTAL AND PER CAPITA PRODUCTION OF DAIRY PRODUCTS IN CALIFORNIA



**FIGURE I: IMPORTANT CHANGES HAVE OCCURRED SINCE 1924
IN THE OUTPUT OF VARIOUS DAIRY PRODUCTS IN
CALIFORNIA. (DATA FROM TABLES 5 & 6)**

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in 1930, 44.2 million pounds in 1940, and 73.2 million pounds in 1943. It is significant in this respect that butter consumption per capita in California has shown a consistent tendency to decline. Consumption of butter per capita in California averaged during the 1920's about 20 pounds per capita annually; during the 1930's, about 17 pounds; and during the years 1940-1943, only about 14 pounds. ^{3/}

(2) Market milk. The volume of market milk distributed in cities, towns, and villages increased steadily from 92.5 million gallons annually to 132.0 million gallons in 1929, then declined during the depression years to 122.1 million gallons in 1933. From then on the volume distributed increased each year, and at a greatly accelerated pace since 1940. In 1945, nearly 330 million gallons of milk were distributed, about double the volume in 1939, and more than three times the volume in 1924.

Except for a decline during the first few years of the depression (1930-1933), the per capita consumption of market milk increased steadily from 21 gallons yearly in 1924 to nearly 25 gallons in 1940, and then increased rapidly to about 36 gallons in 1945. The actual increase in per capita since 1941 should be somewhat lower than the figures shown in Table 6 because the data on population do not include members of the armed forces stationed in California, whereas the figures on volume of milk distributed include consumption by the armed forces.

It is probable that if the volume of milk consumed by the armed forces were excluded, the average annual per capita consumption for the years 1942 to 1945 would be 1 to 3 gallons less a year. On the other hand, distributors state that, because of shortages of supply and difficulties of distribution, it was not possible to provide civilian consumers with all the market milk required. Several distributors who were interviewed stated that if consumers could have had all the market milk they required during the war years, the total volume of milk distributed would have been from 5 to 10 per cent higher.

(3) Market cream. The consumption of market cream, as of market milk, increased steadily, from about 4.0 million gallons in 1924 to 7.6 million gallons in 1931; declined during the early depression years to 6.0 millions in 1934 and then again increased steadily to about 8.9 million gallons in 1940. Unlike milk, however, the total volume of cream distributed declined appreciably since 1940, and in 1943 was considerably less than half the volume in 1940. This was due to wartime planning which aimed at diverting cream and milkfat to other uses.

Per capita consumption of cream increased to 1931, declined somewhat during the depression years, and then again increased slowly until 1940. For the reasons stated above, per capita consumption declined rapidly from 1940 on, and in 1944 was just about one half of the per capita consumption in 1924.

(4) Evaporated and condensed milk. The production of evaporated and condensed milk increased at an irregular rate, from 120.3 million pounds in 1924 to about 270.9 million pounds in 1940. Unlike the upward trend in production of market milk, market cream, and ice cream, that of evaporated and condensed milk was maintained during the early depression years. Output increased sharply in

^{3/} Based on calculations made by the authors.

the first time in the history of the world, that the people of the United States have been compelled to go to war with their own government.

The first step in the direction of the rebellion was taken by the Southern Slaveholders, who, in 1860, seceded from the Union.

They did this because they wanted to keep their slaves, and because they wanted to have a government which would protect them in their slaveholding.

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1941 and was maintained at a slightly lower level for the remaining war years. This was in accordance with national wartime food planning.

As only a small proportion of the evaporated and condensed milk produced in California is consumed in the state, the trend in per capita production is not of the same significance as for other dairy products. It is to be noted, however, that output of evaporated and condensed milk per capita showed a consistent, if irregular, tendency to increase -- from about 27 pounds in 1924 to 49 pounds in 1941, with some decline since.

(5) Cheese. Except for minor year-to-year fluctuations, production of cheese increased steadily from 7.9 million pounds in 1924 to 16.6 million pounds in 1933. Since 1933, there has been no consistent tendency toward expansion, output fluctuating between 15.4 million and 17.2 million pounds. In 1944 and 1945, the output of cheese declined appreciably, due, in large measure, to the general shortage of milkfat in the state.

Output of cheese per capita increased irregularly from 1.80 pounds in 1924 to 2.78 pounds in 1933. Between 1933 and 1942, although total volume of output was maintained, per capita output has declined. Because of general shortage of milkfat, the decline in per capita output has been accelerated since 1942, and in 1944 fell to below the 1924 level.

It is important to note that California produces many special types of cheese in favor with important elements in the state's population. Production of cheese has always been insufficient to meet consumption requirements, so that imports into the state have had to be increased steadily from 18.9 million pounds in 1925 (figures for 1924 not available) to 30.6 million pounds in 1943.

(6) Ice cream. The production of ice cream in California has expanded enormously since 1924, in spite of an appreciable decline during the years 1930-1933. In 1924, output amounted to 9.1 million gallons; in 1929, to 15.4 million; in 1939, to 19.5 million; and in 1944, to 34.3 million gallons. Preliminary indications are that output for 1945 will be not far short of 40.0 million gallons, or nearly four and one half times the production in 1924.

Except for the depression years (1930-1934), per capita production increased steadily from 2.0 gallons annually in 1924, to about 2.9 gallons in 1939, and to 3.9 gallons in 1944. The 1945 production will exceed 4.0 gallons per capita.

(7) Ice milk. Output of ice milk, which can be regarded as a lower-quality substitute for ice cream, has made an even more phenomenal growth. In 1924, when the product was comparatively new, output amounted to only 23,000 gallons; by 1929, production had increased to 269,000 gallons. Consumption (and hence output) of ice milk expanded enormously during the depression years when consumers shifted from the higher-priced product -- ice cream. By 1936, output of ice milk had expanded to nearly 7.2 million gallons. Thereafter, there was some decline to 5.9 million gallons in 1938, and again a rapid increase to a new peak of nearly 7.7 million gallons in 1942. With the improvement of buying power during the war years and the general shortage of milkfat, consumers shifted their preference to ice cream. As a result, output of ice milk declined to 4.2 million gallons in 1944.

Annual per capita output of ice milk increased from a mere .01 of a gallon in 1924, to 1.13 gallons in 1936 -- fluctuated around 1.00 gallons until 1942, and has since declined to .49 of a gallon in 1944.

(8) Whole milk powder. Between 1924 and 1939, output of whole milk powder (a comparatively new product in 1924) fluctuated considerably from year to year from a low of 219,000 pounds in 1927 to 843,000 pounds in 1939. In response to war needs, however, output was rapidly expanded to 1.6 million pounds in 1940, and to nearly 12.7 million pounds in 1943. Figures are not available for 1944 and 1945.

(9) Cottage cheese. Although very little milkfat is used in cottage cheese, it is important for its use of solids-not-fat, especially as the great bulk of cottage cheese produced is consumed in the state. Around 1920 in California, a new method of making cottage cheese was perfected, which greatly improved its quality. As a result, output (and consumption) expanded rapidly from 3.2 million pounds in 1923, to 10.1 million pounds in 1925, and to nearly 18.7 million pounds in 1928. During the depression years, output declined rapidly to about 12.3 million pounds in 1932 and 1933. Thereafter, output again expanded rapidly, though irregularly, reaching a new peak of 30.3 million pounds in 1939. During the war years, output held steadily around 25 million pounds, with an increase to 29.4 million pounds in 1944. Preliminary estimates indicate an output for 1945 not far short of 35.0 million pounds.

Output per capita increased from .73 of a pound annually in 1924 to 3.53 pounds in 1928, declined to 2.08 pounds in 1933, and then increased irregularly to a new high of 4.47 pounds in 1939. During the war years, output per capita declined rapidly to 3.07 pounds in 1943, but has since shown a definite tendency to increase.

Percentage Utilization of Milkfat.--An analysis of the trend of production for the various dairy products does not give an entirely adequate picture of the manner in which the milk produced in the state is utilized. This is due to the fact that the milkfat content of such products as market milk, market cream, and ice cream may vary from time to time. For instance, during the 1920's, when the cream line in bottles of milk was used as a "selling point," there was a tendency for distributors to raise gradually the milkfat content of market milk. It is probable that during the 1930's the great bulk of market milk sold had an average milkfat content of 4.0 per cent or better.

With the advent of the fiber container and the shortage of milkfat during the war years, the milkfat content of market milk was gradually reduced so that, from 1943 to 1944 on, the major bulk of market milk sold had a milkfat content not greatly in excess of 3.5 per cent.

Moreover, in order to conserve milk and milkfat, successive Federal War Food Control agencies prohibited the sale of market cream and ice cream of high milkfat content. It is probable that, during the last few years, the average milkfat content of ice cream has not greatly exceeded 10.0 per cent, and of market cream, 20.0 per cent milkfat.

In view of these facts, it is important to consider the relative importance of various dairy products in their utilization of milkfat. On the basis of reports received from distributors and processors, the California Department of Agriculture makes an estimate each year of the per cent of all milkfat used in various dairy products. These data are shown in Table 7 and Figure 2.

In 1924, about 52 per cent of all milkfat produced was used in the manufacture of butter. By 1940, butter was utilizing only 31.8 per cent, and in 1944, only about 12.2 per cent. Preliminary estimates indicate that in 1945 about 6.25 per cent of all milkfat produced was used in the manufacture of butter.

CHAPTER XIX. THE END OF THE FIGHTING.

The last days of the war were filled with scenes of great interest and variety. The final battles were fought, and the final victory was gained. The final peace was signed, and the final victory was gained. The final peace was signed, and the final victory was gained.

THE LAST BATTLES.

THE FINAL BATTLES.

The final battles were fought, and the final victory was gained. The final peace was signed, and the final victory was gained.

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TABLE 7

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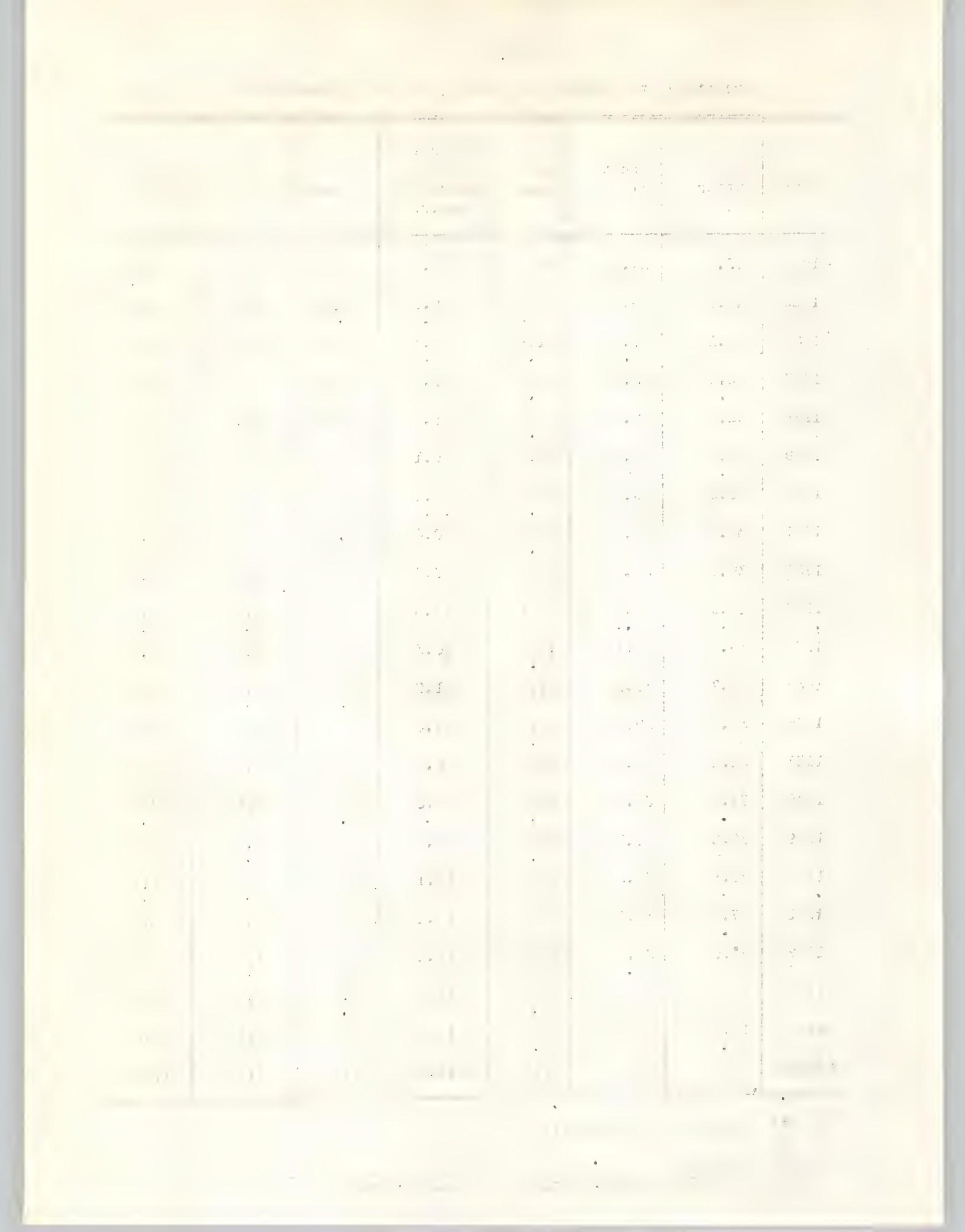
Percentage Utilization of Milkfat Produced in California

Year	Butter	Market milk	Market cream	Evaporated and condensed milk	Cheese	Ice cream	Other
1924	52.0	24.0	8.0	7.0	2.0	4.0	3.0
1925	48.0	26.0	9.0	8.0	1.9	5.0	2.1
1926	16.1	27.6	11.6	8.3	1.6	4.7	---
1927	43.4	28.8	9.1	9.4	1.9	4.6	2.7
1928	42.3	29.6	9.6	8.5	2.0	4.9	3.2
1929	39.5	29.9	10.4	9.1	1.9	5.1	4.0
1930	39.2	29.0	10.6	9.6	1.9	4.7	4.9
1931	38.7	29.3	11.0	10.0	1.9	4.4	4.6
1932	39.4	27.7	11.1	10.8	2.4	3.3	5.2
1933	40.9	26.2	9.8	11.3	3.3	3.0	5.6
1934	38.2	28.1	10.1	10.3	3.2	3.8	6.0
1935	35.7	30.1	11.2	11.0	3.2	4.3	4.3
1936	34.2	29.0	11.0	11.3	3.2	4.6	6.0
1937	34.4	31.8	11.4	8.0	3.2	4.8	5.7
1938	34.6	31.9	12.5	9.0	3.4	4.8	3.7
1939	32.2	31.8	13.2	9.7	2.7	5.8	4.5
1940	31.8	32.0	12.6	11.1	2.5	5.7	4.3
1941	27.9	33.5	12.1	15.4	2.7	6.4	2.0
1942	22.0	39.6	10.1	12.3	2.8	7.7	5.5
1943	16.5	50.7	3.6	11.6	2.5	6.2	8.9
1944	12.2	52.5	5.2	14.4	1.8	6.9	7.0
1945	6.2	54.5	2.3	16.0	2.0	7.5	11.5

*/ Preliminary estimate.

Source of data:

California State Dept. Agr. Statistical Reports of Calif. Dairy Products
Sacramento, 1924-1945.



PER CENT MILK FAT USED IN VARIOUS DAIRY PRODUCTS IN CALIFORNIA

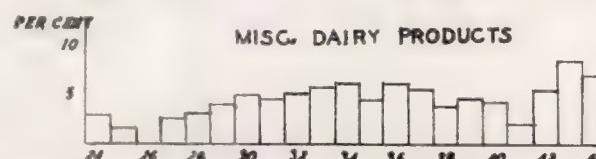
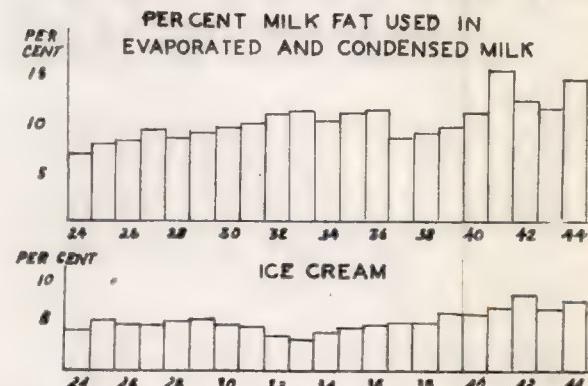
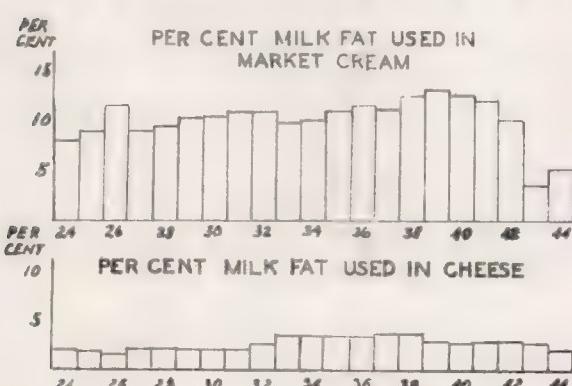
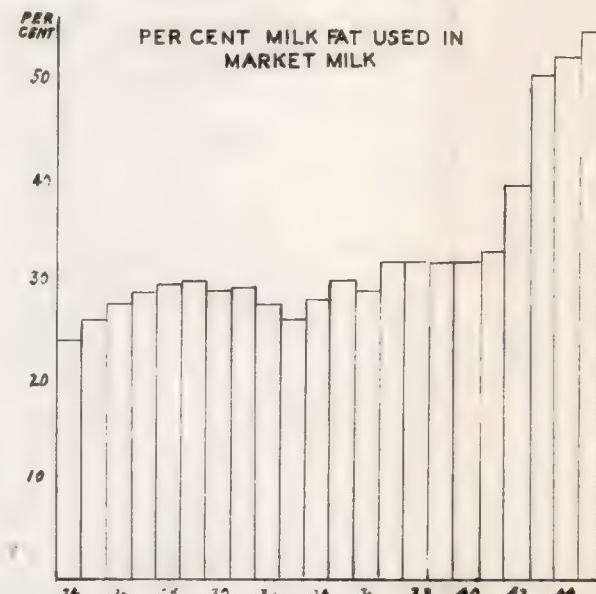
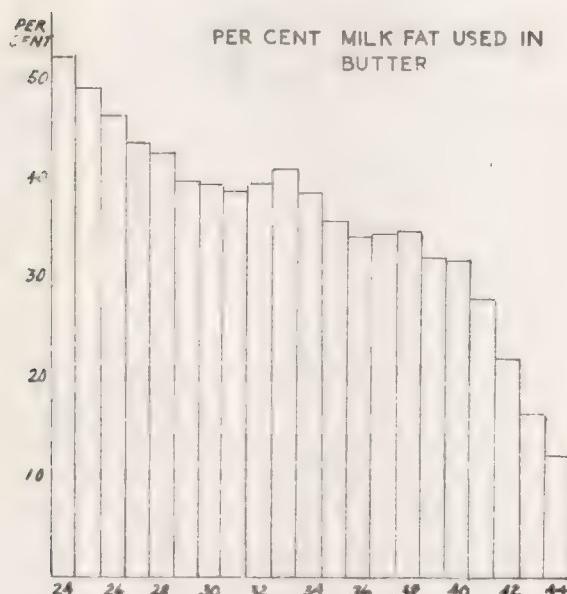
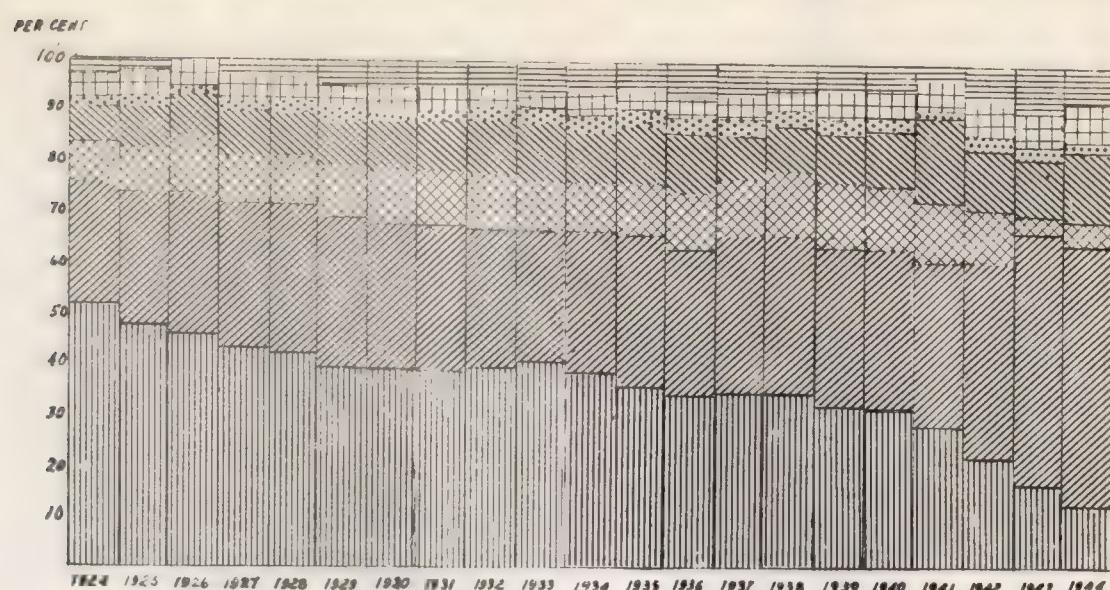


FIGURE 2: SINCE 1924 THE VOLUME OF MILK FAT USED IN BUTTER HAS DECLINED STEADILY WHEREAS THAT USED IN OTHER DAIRY PRODUCTS HAS SHOWN A PERSISTENT TENDENCY TO INCREASE, EXCEPT DURING WAR YEARS (DATA FROM TABLE 7)

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The position of market milk was almost the complete reverse of that for butter. In 1924, only 24 per cent of all milkfat produced in California was used in market milk. By 1940, the utilization of milkfat in market milk had increased to 32.0 per cent. From 1941 to 1945, in spite of a reduction in the average milkfat content of market milk, milkfat utilization in this product shot up to 52.5 per cent in 1944, and about 55 per cent in 1945.

The proportion of all milkfat used in market cream, ice cream, evaporated and condensed milk, cheese, and miscellaneous dairy products increased gradually between 1924 and 1940. In 1924, these products used about 24 per cent of all milkfat produced in California. By 1940, the proportion had increased to 36.2 per cent. Although these products used about the same proportion of milkfat in 1944, their relative importance had changed considerably.

Under the stress of a phenomenal growth of population and of buying power in California, and of a resultant shortage of milkfat and of wartime restrictions on the use of certain dairy products and the promotion of others, the proportion of milkfat used in market cream declined from 12.5 per cent in 1940 to only 3.6 per cent in 1943, and 5.2 per cent in 1944. This decline is considerably greater than the decline in volume of cream used, largely because of the reduction in the average milkfat content of cream. Cheese also showed a decrease in the volume of milkfat used -- from 2.5 per cent in 1940 to 1.8 per cent in 1944.

On the other hand, the proportion of all milkfat used in ice cream, evaporated and condensed milk, and other dairy products increased considerably, although the relative importance of these three groups changed somewhat from year to year.

Outlook for the Dairy Industry in California

The analysis thus far has shown that there has been a gradual upward trend in milkfat production since 1924, but that the increase in production has not kept pace with the increase in population. As a result, the output of milkfat per capita has declined steadily between 1924 and 1940 and at a greatly accelerated rate since then.

The total volume of production, as well as output per capita of market milk, cheese, evaporated and condensed milk, and ice cream, rose gradually during the period 1924 to 1940. With the exception of cheese, all of these products showed an even more rapid use between 1940 and 1944. Output of cheese declined slightly during the war years. Although total production of market cream increased up to the outbreak of the war, per capita output has shown no significant trend. Due to wartime restrictions, both total volume of production and output per capita of market cream have declined precipitately since 1940.

Production of butter has declined consistently since 1924, the rate of decline being greatly accelerated since the war. On a per capita basis, the rate of decline has been even more rapid.

Are these trends permanent or, during the next few years, can the following events be expected?

1. Either a more rapid expansion of output of milkfat in the state? or
2. A slowing down, or even a diminution, of the population of the state? or
3. A very marked decline in purchasing power which will cause a drop in the consumption of the higher priced dairy products -- market milk, market cream, and ice cream?

Trends.--Predictions of the future are extremely hazardous, especially at the present time when the country is in the throes of reconversion from a wartime to a peacetime basis. Certain broad generalizations, however, may be made with regard to such factors in the situation as: (1) population, (2) purchasing power, (3) output of milkfat, and (4) utilization of dairy products.

(1) Population. The population of the state did not decline to nearly the extent expected with the cessation of wartime production. The estimate of 8,823,000 for July 1, 1945, shows some increase over that for 1944. Moreover, the above figure does not include citizens of the state who were in the armed forces, most of whom have since returned to civilian life. Many servicemen from other states, who were stationed in California during the war, are taking up residence in California. Marriages have increased, and many families separated during the war have been reunited. This should indicate an increase in the birth rate.

These factors would indicate a continued increase in the population of the state for several years. An increase in the ratio of very young children would, moreover, favor a larger per capita consumption of dairy products.

(2) Purchasing power. Although buying power is bound to decline somewhat from the high levels reached in 1944 and 1945, any marked recession in business activity is unlikely to occur during the next five years or so. There exists a huge backlog of civilian needs for consumer goods of all types. There is also much pent-up buying power. When the present labor difficulties are settled, a considerable expansion in industrial activity reasonably may be expected. This will mean heavy employment and a continued generation of consumer buying power for several years.

Moreover, the country is agreed upon the necessity of reorganizing our economy to ensure "full employment." Although there is, as yet, no general agreement as to the essential bases of a "full employment program," this factor alone should warrant some optimism as to the continuance of a fairly high level of purchasing power.

(3) Output of milkfat. Although the dairy industry of California probably will continue to expand during the next few years, little evidence exists to warrant an assumption that the expansion will be at a relatively more rapid rate than that for population.

Shortage of feed during the next year or two will serve to curtail production. With the removal of the patriotic urge, it is doubtful whether farmers will push their production as vigorously as they did during the war years. It is not unlikely that a larger number of employees in the state will become "unionized." This will lead to some difficulties, especially during the period of adjustment. In some parts of the state, where conditions are favorable, farmers may tend to shift to other lines of production, e.g., raising of beef cattle and sheep, which are less dependent upon a large labor force. On the other hand, the return of younger and more vigorous men as agricultural employees should tend to increase output per man-hour. Other favorable factors are the availability of more water from the Central Water Authority and an expansion in the acreage and quality of pasture.

Weighing all these factors together, it is possible to predict a decline in production of milkfat in California for 1946 -- a decline which may easily reach 10 per cent below the 1945 level. It is doubtful whether the feed situation (especially concentrates) will be very greatly improved in 1947. Thereafter, the

favorable factors should encourage an expanded output of milkfat, but it is extremely doubtful whether this will be accomplished at as rapid a rate as that for population. In other words, the output of milkfat per capita is expected to decline for several years to come.

(4) Utilization of dairy products. The removal of price controls over dairy products, or a readjustment of prices between products, will undoubtedly cause some shifts in the proportion of all milkfat used in various dairy products. There can be little doubt that price relations between butter and other dairy products during the war years hastened and aggravated the decline in output of butter, both in California and in the United States as a whole.

In fact, it is difficult to see how, even under the most favorable conditions, butter can regain its former position in the dairy industry of California. Output of butter had declined, both relatively and absolutely, for over fifteen years before the outbreak of the war. The great increase in population and in buying power since 1940 merely accelerated the decline in use of milkfat in butter.

In 1944, about 65 per cent of all milkfat produced in California was utilized in three products -- market milk, market cream, and ice cream. From preliminary data available, it would appear that these products used not far short of 70 per cent of all milkfat in 1945.

It should be stressed, moreover, that if restrictions are removed, all three of these products would easily utilize an even greater proportion of milkfat. Several distributors have stated that shortages of supply had restricted use of market milk during the war years. For consumer demand to have been met fully, at least 5 per cent and probably 10 per cent more market milk would have been required. Further, because of the shortage (as well as for several other reasons), the milkfat content of market milk was restricted to an average for the state of about 3.6 per cent. Although it is doubtful whether distributors in the future will again try to stabilize their standard milk at 4.0 per cent, removal of restrictions will probably effect some increase in the average milkfat content, say to 3.7 or 3.8 per cent.

In 1944, the total volume of market cream consumed in the state was less than half that consumed in 1940. Moreover, only coffee cream was available. If restrictions are removed or modified, it is not unlikely that the total volume of consumption of market cream will rise to above 1940 levels (8.9 million pounds) and that the milkfat test would also increase.

The utilization of milkfat in ice cream during recent years has been curtailed by two important restrictions. First, a limitation on the milkfat content of ice cream was made by the War Food Administration. Second, a shortage of sugar placed a definite curb on the volume of ice cream that could be manufactured. A removal of these two restrictive factors would result in an upward surge of ice-cream production and a greatly increased utilization of milkfat in this product.

If population growth and a high level of buying power are maintained, and if restrictions (price and other) on output of dairy products are removed, it is not unlikely that during the next few years market milk, market cream, and ice cream will utilize between 75 and 80 per cent of all milkfat produced in the state. Under less favorable conditions of population growth and buying power, the percentage of all milkfat used by these three products would probably not fall much below 70 per cent.

Thus, the total volume of milkfat available for all uses other than market milk, market cream, and ice cream would be between 20 and 30 per cent. How much of this would go to butter? Production of cheese will take between 2 and 3.5 per cent of all milkfat; ice milk, dried whole milk, and miscellaneous dairy products would probably require between 4 and 7 per cent. This will account for a minimum of 6 per cent and a maximum of 10.5 per cent. The evaporated milk plants of California are very efficient and, under ordinary conditions, would compete successfully with butter-manufacturing plants for milk.

All these considerations lead to the conclusion that, during the next five years or so, butter will be manufactured regularly only in a few outlying plants in the state, or in other plants only during spring and early summer months when production of milkfat is at a peak. Under the most favorable conditions, California may produce 30 million pounds of butter a year -- more probably, output will run between 10 and 15 million pounds annually.

With these tentative conclusions as a background, attention may now be directed to a consideration of the status of the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association.

Operations of the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association

Development.--Both of these producer coöperative associations have been in operation for over a quarter of a century. The Bodega Coöperative Creamery Incorporated is located at Bodega, a small village in the western part of Sonoma County, roughly fifty miles northwest of San Francisco. The Point Reyes Dairymen's Association is located at Point Reyes, a small village in the western part of Marin County, about thirty miles northwest of San Francisco. Although these two associations are only twenty odd miles apart, they do not overlap to any extent, as they are separated by miles of hilly country. It should be pointed out, however, that the Petaluma Coöperative Creamery, located at Petaluma, draws milk from the territory covered by both the above associations.

Although, during the course of time, the operation methods of both the Bodega and the Point Reyes associations have been modified, their primary function has been to manufacture butter. When they were first organized, all milkfat received was in the form of cream. During the 1920's, however, increasing quantities of whole milk were received from patrons and separated at the plants. The milkfat in the whole milk, as well as that in the cream, was manufactured into butter, the skim milk into either skim-milk powder (now known as non-fat-solids powder) or casein. Small quantities of cream were at times sold as manufacturing cream; and, at times, some of the skim milk was also processed into cottage cheese. Both associations also manufactured cheese for a number of years.

As late as 1940, both associations received from member patrons over half of their milkfat in the form of sweet cream. Since 1940, however, sweet-cream shipments have declined precipitately, so that in 1945 only about one tenth of the milkfat for manufacturing purposes was in the form of sweet cream. In 1938, a few members in both associations equipped their dairies to ship market milk and market cream. The volume of market-milk shipments has grown to such proportions that it accounts for over half of the milkfat received by both of these associations.

Both the Bodega and the Point Reyes associations are members of the Challenge Cream and Butter Association, a federated selling association with members in the Western States. The head office of Challenge is in Los Angeles,

1000' above the sea level. The soil is very poor, consisting of sand and gravel, with a thin layer of humus on top. The vegetation consists of scrubby trees and shrubs, with some grasses and flowers. The climate is warm and humid, with temperatures ranging from 60° to 80° F. The rainfall is moderate, about 40 inches per year.

The first stage of the project involved the construction of a dam across the river, which was completed in 1955. This created a reservoir of 1000 acres, which provided water for irrigation and drinking purposes. The second stage involved the construction of a hydroelectric power plant, which was completed in 1960. This plant has a capacity of 100 megawatts and provides electricity to the surrounding area. The third stage involved the construction of a road network, which was completed in 1965. This road network connects the town to the rest of the country and provides access to the reservoir and the power plant. The fourth stage involved the construction of a series of small dams and canals, which were completed in 1970. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The fifth stage involved the construction of a series of small dams and canals, which were completed in 1975. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The sixth stage involved the construction of a series of small dams and canals, which were completed in 1980. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The seventh stage involved the construction of a series of small dams and canals, which were completed in 1985. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The eighth stage involved the construction of a series of small dams and canals, which were completed in 1990. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The ninth stage involved the construction of a series of small dams and canals, which were completed in 1995. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The tenth stage involved the construction of a series of small dams and canals, which were completed in 2000. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The eleventh stage involved the construction of a series of small dams and canals, which were completed in 2005. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twelfth stage involved the construction of a series of small dams and canals, which were completed in 2010. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The thirteenth stage involved the construction of a series of small dams and canals, which were completed in 2015. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The fourteenth stage involved the construction of a series of small dams and canals, which were completed in 2020. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The fifteenth stage involved the construction of a series of small dams and canals, which were completed in 2025. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The sixteenth stage involved the construction of a series of small dams and canals, which were completed in 2030. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The seventeenth stage involved the construction of a series of small dams and canals, which were completed in 2035. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The eighteenth stage involved the construction of a series of small dams and canals, which were completed in 2040. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The nineteenth stage involved the construction of a series of small dams and canals, which were completed in 2045. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twentieth stage involved the construction of a series of small dams and canals, which were completed in 2050. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-first stage involved the construction of a series of small dams and canals, which were completed in 2055. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-second stage involved the construction of a series of small dams and canals, which were completed in 2060. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-third stage involved the construction of a series of small dams and canals, which were completed in 2065. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-fourth stage involved the construction of a series of small dams and canals, which were completed in 2070. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-fifth stage involved the construction of a series of small dams and canals, which were completed in 2075. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-sixth stage involved the construction of a series of small dams and canals, which were completed in 2080. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-seventh stage involved the construction of a series of small dams and canals, which were completed in 2085. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-eighth stage involved the construction of a series of small dams and canals, which were completed in 2090. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The twenty-ninth stage involved the construction of a series of small dams and canals, which were completed in 2095. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land. The thirtieth stage involved the construction of a series of small dams and canals, which were completed in 2100. These structures help to regulate the flow of water and provide irrigation for the surrounding agricultural land.

and branch offices and plants are operated in several cities in California, including San Francisco and Oakland. Both the Bodega and Point Reyes associations are under contractual obligation to sell their products through Challenge.

The Petaluma Coöperative Creamery, above referred to, which draws part of its supplies of milk from the territories of the Bodega and Point Reyes associations, is not a member of Challenge. Although from time to time moves have been made both from within and outside the Petaluma Coöperative Creamery for its affiliation with Challenge, the members of the association have considered that they earned higher returns, over the years, than they would have if they had sold their finished products through Challenge.

Although this study is not directly concerned with the operations of the Petaluma Coöperative Creamery, indirect consideration of its operations and policies has been necessary because, first, it covers some of the territory covered by the other two associations, and, second, during the last two years, at least, it has been able to make better returns to its patrons than have the Bodega and Point Reyes associations. As a result, both of the latter associations have lost members to the Petaluma association and stand to lose even more at the end of this fiscal year (June 30).

The Bodega Coöperative Creamery Incorporated

Milkfat Received.--An analysis of the volume of milkfat handled by the Bodega Coöperative Creamery Incorporated, between 1934-35 and 1944-45, indicates that there has been a fairly consistent growth in receipts from member patrons. During the year 1944-45, the volume handled was double that for 1935. There has been, moreover, a marked shift in volume of milkfat received in cream, manufacturing milk, and market milk. In 1934-35, milkfat in manufacturing cream amounted roughly to one third of all milkfat received; the balance was in the form of manufacturing milk. In 1939-40, manufacturing cream accounted for 25 per cent of all milkfat, manufacturing milk for 67 per cent, and market milk for 8 per cent. By 1944-45, manufacturing cream accounted for only 2 per cent of all milkfat received, manufacturing milk for about 50 per cent, and market milk for about 48 per cent (table 8).

During the period July 1-December 31, 1945, receipts of milkfat in manufacturing milk were only 145,000 pounds, compared with 214,000 pounds during the last six months of the previous year; and milkfat in manufacturing cream amounted to only 3,000 pounds, compared with 10,000 pounds the previous year. This was due, in large measure, to a drastic decline in the number of shippers since the end of the last fiscal year. Receipts of milkfat in market milk were not greatly different.

Membership.--The number of active members has shown a tendency to decline within recent years. In 1938-39 there were 128 shippers; in 1944-45 only 115 (table 9). Market-milk shippers increased from 8 in the previous year to 27 in the latter, whereas manufacturing-milk and cream shippers declined from 120 to 88. A count of active shippers made in February, 1946, gave only 26 market-milk shippers and only 51 manufacturing-milk and cream shippers, indicating another serious decline in membership.

The turnover in membership in recent years has been very heavy, especially for manufacturing-milk shippers. It is apparent that only a small number of the present membership has been active for any length of time. The removals from membership of manufacturing shippers is due largely to dairymen selling their herds, partly to transfers to market-milk shipping, and partly to transfer of

1. *On the Nature of the Human Species* (1749)

2. *On the Origin of Species by Means of Natural Selection* (1859)

3. *The Descent of Man, and Selection in Relation to Sex* (1871)

TABLE 8
 Bodega Coöperative Creamery Incorporated
 (Deliveries by Patrons)

*/ Year	Milkfat in				Total milk- fat (1,000 pounds)	Change 1935=100 (per cent)
	Manufacturing cream (1,000 pounds)	Manufacturing milk (1,000 pounds)	Total manufacturing (1,000 pounds)	Market milk (1,000 pounds)		
1934-35	195	413	608	0	608	100.0
1935-36	159	426	585	0	585	96.1
1936-37	142	464	606	0	606	99.2
1937-38	142	663	805	11	816	134.2
1938-39	255	501	756	34	790	130.0
1939-40	210	555	765	69	834	137.1
1940-41	182	657	839	133	972	159.8
1941-42	117	667	784	229	1013	166.5
1942-43	75	620	695	275	970	159.5
1943-44	40	583	623	450	1073	176.3
1944-45	22	621	643	591	1234	202.8

*/ Fiscal year ends on June 30.

Source of data:

Compiled from the records of the Bodega Coöperative Creamery Incorporated.

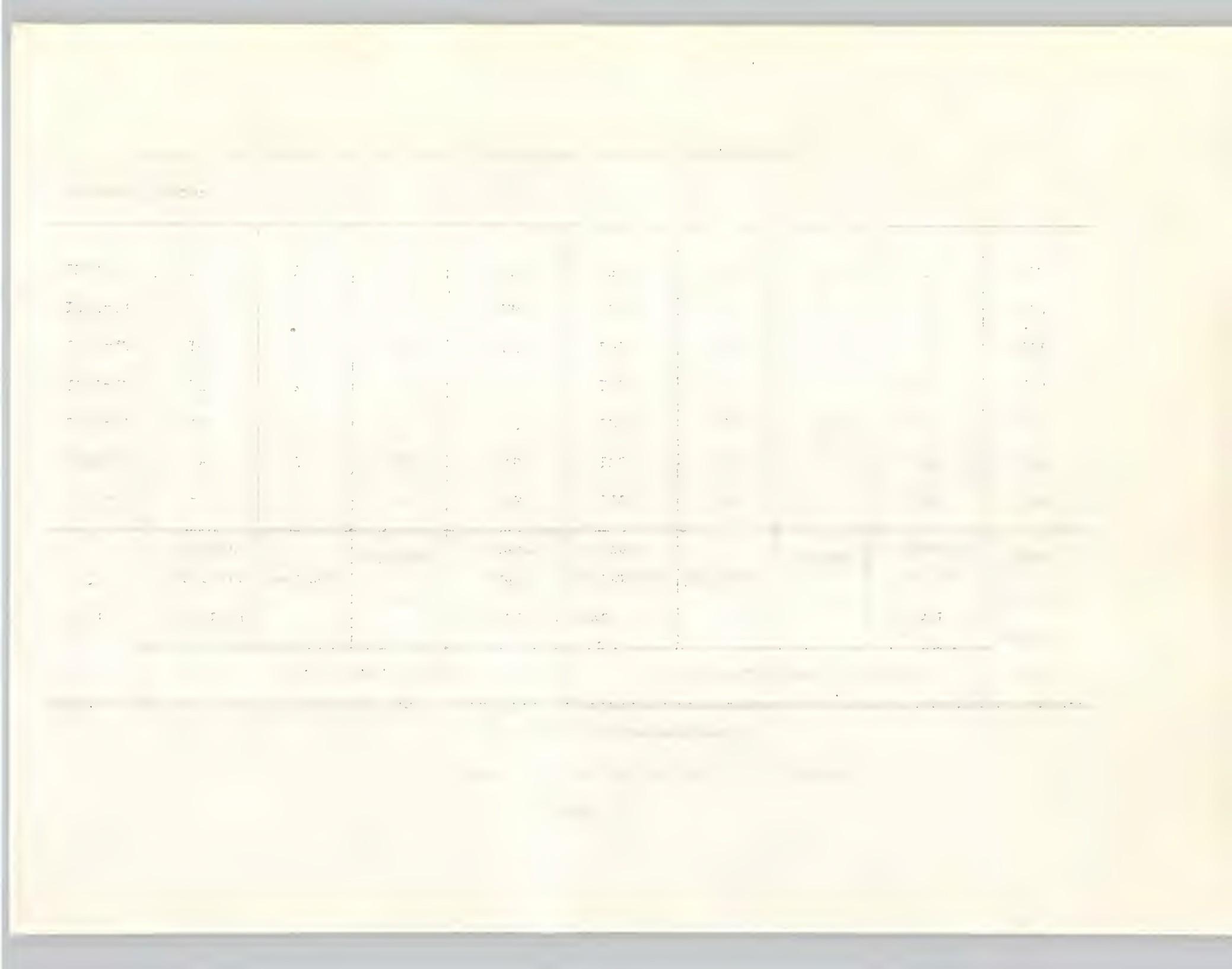
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TABLE 9
Bodega Coöperative Creamery Incorporated
(Change in Active Membership)

Year	Market-milk shippers			Manufacturing-milk shippers				Total members at end of year	
	Number at beginning of year	Removals	New Members	Number at end of year	Number at beginning of year	Removals	New Members		
1938-39	--	0	8	8	149	29	0	120	128
1939-40	8	6	13	15	120	30	30	120	135
1940-41	15	1	3	17	120	31	30	119	136
1941-42	17	3	5	19	119	57	46	108	127
1942-43	19	4	8	23	108	44	34	98	121
1943-44	23	3	6	26	98	37	32	93	119
1944-45	20	1	2	27	93	26	21	78	115

Source of data:

Compiled from records of the Bodega Coöperative Creamery Incorporated.



patronage to other plants operating in the area. The new shippers represent dairymen who have purchased farms and herds from dairymen who have gone out of business.

Although the number of active shippers declined materially between 1938-39 and 1944-45, the increase in volume of milkfat handled by the association indicates an increase in size of herds.

Table 10 shows the size of the dairy herds of market-milk, manufacturing-milk, and cream shippers in February, 1946. As is to be expected, the herds of the market-milk shippers are much larger than those of the manufacturing-milk and cream shippers. The 26 market-milk shippers had a total of 2,179 cows (in milk and dry), or an average of about 84 cows per herd, whereas the 53 manufacturing-milk and cream shippers had only 1,406 cows (in milk and dry), or an average of 26 cows per herd.

All the manufacturing-milk and cream dairies were located in the area west of Santa Rosa. The market-milk dairymen, however, were more scattered, seven being located between Cotati and Petaluma, and four south of Petaluma. As each member's milk is picked up by truck and taken directly to Oakland, this scattering of market-milk shippers does not increase the cost of collection.

Financial Aspects.--Income and expense for only the last four fiscal years were analyzed, as these were the most crucial years from the standpoint of this analysis. The gross value of sales increased each year from 1941-42 to 1944-45, due partly to increased volume and to higher prices. Payments to members show a similar rise. Manufacturing expenses have increased steadily, partly as a result of increased volume, and partly as a result of a rise in the price of cost factors -- especially supplies and labor. The unit cost of manufacturing increased from 3.11 cents per pound in 1941-42, to 3.22 cents in 1942-43, to 4.04 cents in 1943-44, and 4.23 cents in 1944-45. The sharp increase in the last two years is due largely to smaller volume.

Unit cost of manufacturing casein increased from 2.54 cents a pound in 1941-42, to 2.70 cents in 1942-43, and then declined to 2.22 cents in 1943-44. In 1944-45 the association began manufacturing non-fat-solids powder, the total cost of manufacturing being higher than that for casein. This was, however, offset by higher returns for the sale of non-fat-solids milk powder.

General and administrative expenses have been very greatly reduced from \$26,182.00 in 1941-42 to only \$15,188.00 in 1944-45. General and administrative expenses have been reduced from 3.85 cents per dollar of gross sales in 1941-42 to 1.39 cents in 1944-45.

The association attempts to pay to its members, for milk and cream, prices comparable with those paid concurrently by other private and coöperative creameries operating in the same general territory. Average prices paid to producers per pound of milkfat are shown in the following statement:

To shippers of	1941-42	1942-43	1943-44	1944-45
Cream	\$.4161	\$.5278	\$.5395	\$.5453
Manufacturing milk	.5377	.6570	.7346	.7467
Market milk	.8119	1.0004	.9515	.9301

If, at the end of the year, a sufficient net operating profit (from retains from members plus other income) exists, and if the cash situation permits,

TABLE 10
 Bodega Coöperative Creamery Incorporated
 (Number of Dairy Cows in Herds of Shippers, February, 1846)

Size of herd ^{*/}	Shippers of market milk	Shippers of	Total
		manufacturing milk and manufacturing cream	
0 - 10	0	18	18
11 - 20	3	12	15
21 - 50	4	13	17
51 - 75	8	9	17
76 - 100	5	1	6
101 - 150	2	0	2
over 150	<u>2</u>	<u>0</u>	<u>2</u>
Total	26	53	79

^{*/} Includes cows in milk and dry.

Source of data:

Compiled from data supplied by the manager of the Bodega Coöperative Creamery Incorporated.

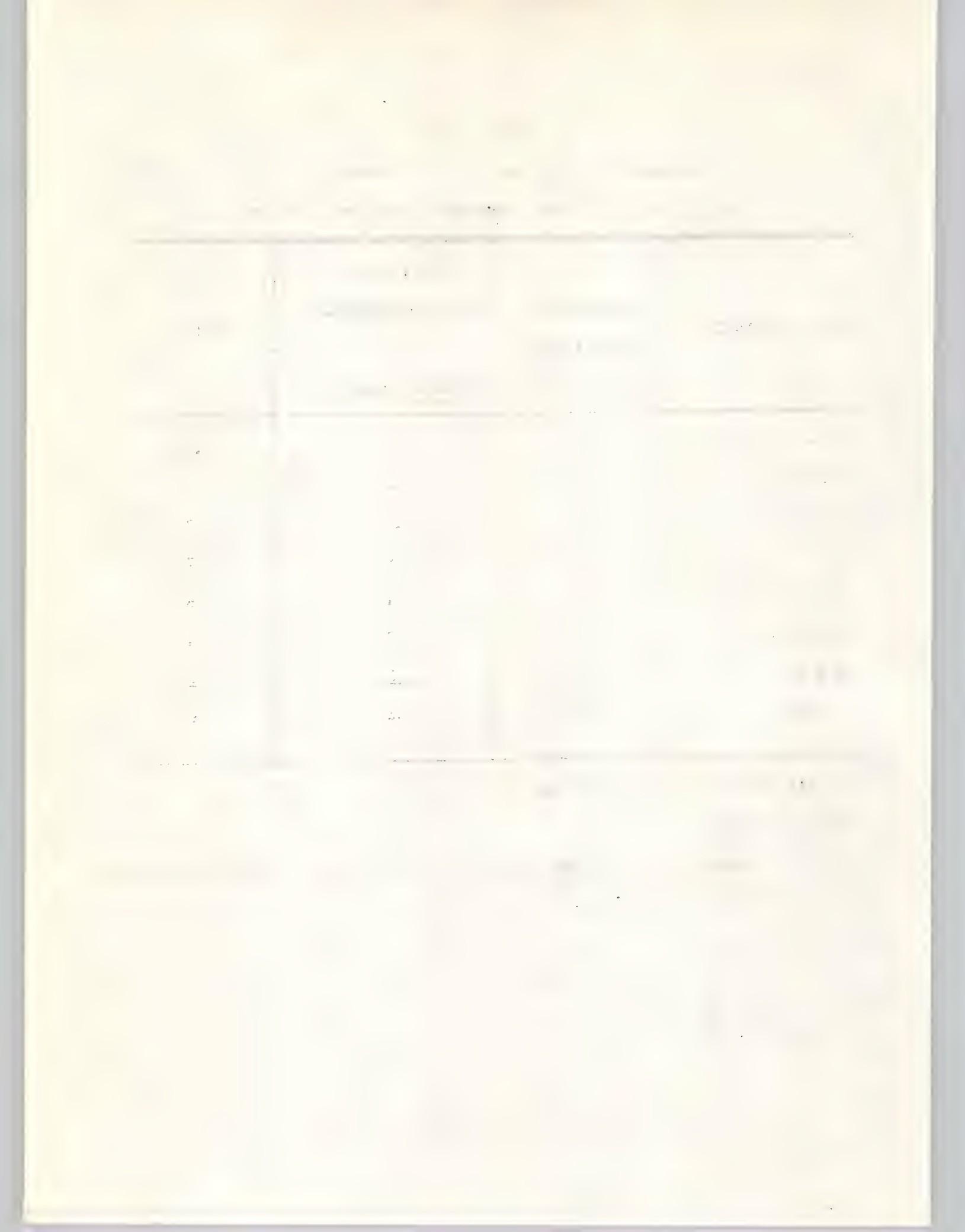
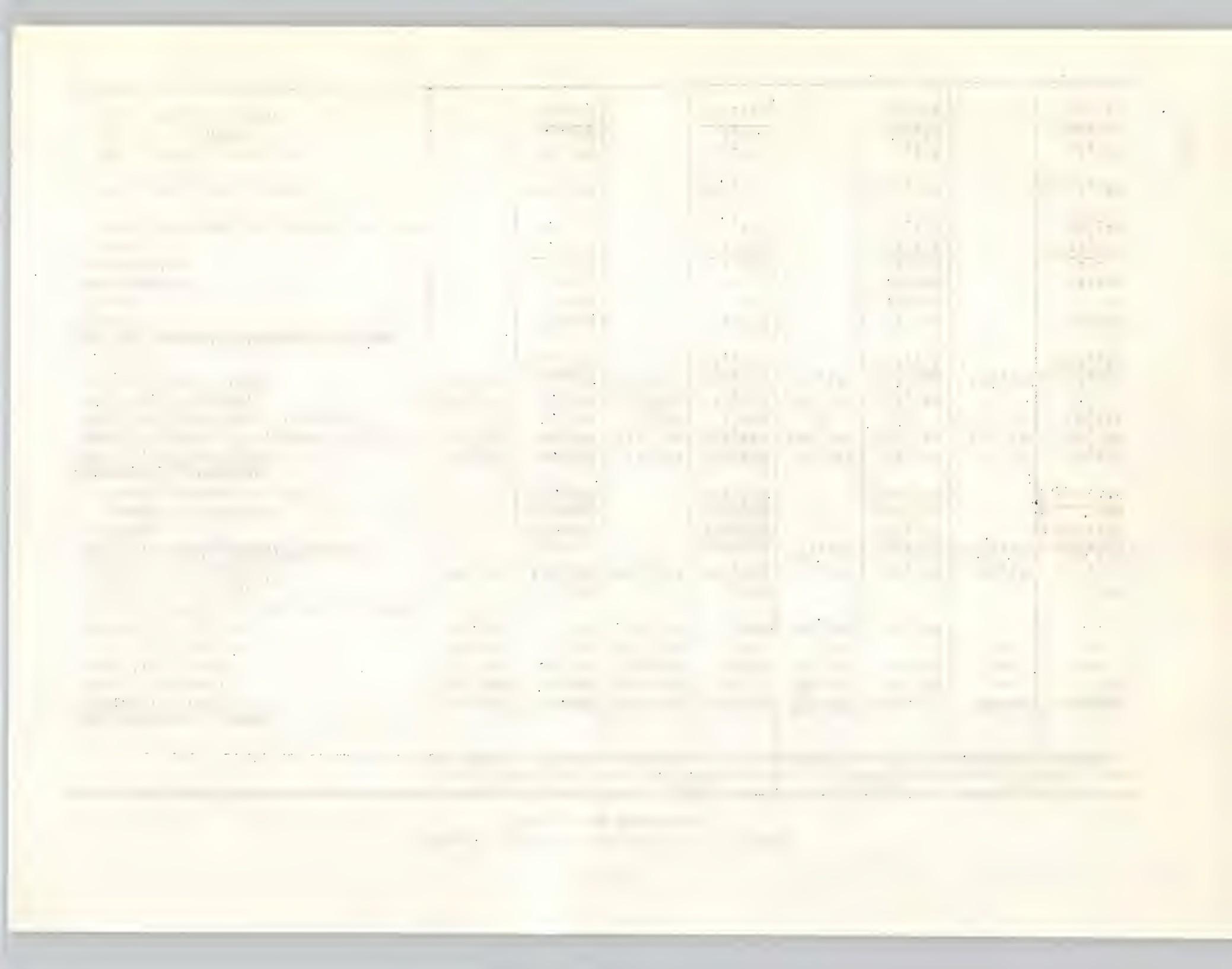


TABLE 11

Bodega Coöperative Creamery Incorporated
(Income and Expenses)

	1941-42		1942-43		1943-44		1944-45	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
<u>Net proceeds of sales</u>								
Butter (pounds)	973,764	389,669	920,602	465,656	785,596	404,007	795,046	350,519
Casein (pounds)	387,568	74,178	400,999	65,931	470,554	98,712	---	804
Whey (100 pounds)	129,477	11,518	122,829	18,831	97,065	23,870	---	---
Skim milk (pounds)	373,916	2,881	189,998	1,552	1,056	8	---	---
Buttermilk (pounds)	212,180	1,072	153,576	840	324,460	2,333	---	---
Manufacturing milk and cream (local) and miscellaneous	—	3,036	—	1,193	—	44	—	2,178
Market milk (pounds)	229,485	184,330	274,958	277,391	449,764	430,004	590,736	570,814
Non-fat-solids powder (pounds)	---	---	—	—	77,423	10,825	1,165,940	165,818
Total		666,685		831,394		969,803		1,090,133
Change in inventory		+11,948		-9,829		-13,010		233
Gross proceeds of sales		678,633		821,565		956,793		1,090,366
<u>Payments to producers</u>								
Cream (pounds milkfat)	116,761	48,581	75,039	39,609	39,557	21,344	21,733	10,508
Manufacturing milk (pounds milkfat)	666,555	277,287	617,781	326,165	583,470	314,782	620,518	425,008
Other milk and cream (pounds)		2,758	1,834	1,046	—	—	—	2,211
Skim milk (pounds)	137,491	81,096	128,815	79,822	221,260	113,878	—	—
Market milk (pounds)	229,485	182,980	274,958	276,055	449,764	427,944	590,736	549,449
Total		592,702		722,697		877,948		987,176
<u>Cost of manufacturing and handling</u>								
Butter		30,265		29,687		31,724		33,602
Casein		9,834		10,816		10,443		47
Skim powder		—		—		6,205		37,426
Market milk		1,345		1,332		3,443		—
Total		41,444		41,835		51,815		71,075
Administrative and general expense		26,182		24,717		24,304		15,188
Total cost and expense		660,328		789,249		954,067		1,073,439
Net operating revenue		18,305		32,316		2,726		16,927
Add other income		3,203		3,797		10,773		18,645
Net income for year		21,508		36,113		13,499		35,572



the association pays a bonus to its members for all milkfat delivered during the course of the year. The amounts available for bonuses (and reserves), in each of the four years, is shown in the last line in Table 11. In 1944-45, however, the cash position was such that the board of directors decided to defer payment of a bonus. Although confirmation was not possible, a statement was made that during the last two years the Petaluma Coöperative Creamery was able to pay its manufacturing-milk patrons bonuses considerably in excess of those paid by the Bodega Coöperative Creamery Incorporated. This was one of the main causes for dissatisfaction among members of the latter association.

Balance Sheet.--The financial position of the Bodega Coöperative Creamery Incorporated, as of June 30, 1945, is shown in Table 12. Current liabilities were just about equal to current assets. The association would thus experience difficulty in meeting any emergency expenses. Because of the lack of funds, a decision was made not to distribute the proceeds from the 1944-45 operations to members in the form of a bonus.

Long-term liabilities are of two categories: a long-term facilities loan from the Berkeley Bank for Coöperatives, of which \$20,088 was outstanding, and liability to members. The liabilities to members consisted of about \$17,000 for stocks issued and outstanding and \$60,828 in revolving-fund certificates and \$35,572 in undistributed proceeds from 1944-45 operations.

In the event of liquidation, the \$20,088 owed to the Berkeley Bank for Coöperatives would be a first call against assets. This is fully covered by sound long-term investments in the Challenge Cream and Butter Association and in the Berkeley Bank for Coöperatives. Membership equity would be evidenced by the balance of long-term investments (\$66,771), less the amount owed to Berkeley Bank for Coöperatives (\$20,088), plus what could be realized from the sale of fixed assets.

The original investment in land, buildings, equipment, and improvements was \$137,466. Depreciation to June 30, 1945, amounted to \$76,808, with a book balance for fixed assets of \$60,658. It is difficult to estimate the current market value of the fixed assets. In view of current general shortages and high prices for equipment and property, the association, even under adverse conditions, should be able to realize at least 50 per cent of the net book value of assets. This would mean that members' equity of \$113,603 would be met as follows:

Investments	\$ 66,771
Less liability to Berkeley Bank for Coöperatives	20,088
	<hr/>
	\$ 46,683
Plus 50 per cent of fixed assets	30,329
	<hr/>
	\$ 77,012

The association would be able to pay approximately 68 cents on the dollar.

It is necessary to stress, however, that the total loss involved (even using a conservative estimate of fixed assets) would not be large (about \$30,000). Continued operation of the association, with a dwindling volume of manufacturing milk and cream, could easily result in yearly losses of income to members of amounts in excess of \$30,000.

the same material or similar to the one used in the original
specimen, and the same, or different, colour, and the same
or different specific gravity. In this case, the new
specimen is not necessarily the original, but it may be
so, and it may be a copy of the original, or it may be
a copy of some other specimen. The new specimen
is not necessarily the original, but it may be a copy of the original,
or it may be a copy of some other specimen.

REPLICA OF THE SPECIMEN

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a copy of some other specimen. The new specimen is not necessarily
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Bodega Coöperative Creamery Incorporated
(Condensed Balance Sheet, at June 30, 1945)

<u>ASSETS</u>			<u>dollars</u>
<u>Current assets</u>			
Cash on hand in bank			13,825
Accounts receivable		18,293	
Less reserve for bad debts		7,750	10,543
Trade acceptances			78,817
Inventory			12,630
			115,815
<u>Investments</u>			
Certificates of interest and revolving capital in Challenge Cream and Butter Association			65,371
Stock -- Berkeley Bank for Coöperatives			1,400
	Depre-		66,771
<u>Fixed Assets</u>	Cost	ciation	Net
Land	3,166	3,165	1
Water and sewer system	3,326	166	3,160
Buildings and improvements	38,955	32,295	6,660
Machinery and equipment	80,460	32,018	48,442
Trucks	1,618	1,209	409
Office equipment	1,400	1,348	52
Milk cans	8,541	6,607	1,934
	137,466	76,808	60,658
<u>Other assets and prepaid expenses</u>			
Insurance			2,398
Supplies inventory			3,689
Total			6,086
			249,330
<u>LIABILITIES</u>			
<u>Current liabilities</u>			
Accounts payable			10,288
Notes payable -- Berkeley Bank for Coöperatives			4,934
Interest, unclaimed checks, etc.			1,186
Advances payable to members (June deliveries)			99,231
			115,639
<u>Long-term liabilities</u>			
Berkeley Bank for Coöperatives			20,088
<u>Capital and reserves</u>			
Stock of \$8.00 par value per share			
2,104 issued and outstanding		16,832	
Stock purchase credits		371	
		17,203	
<u>Patrons equity reserves</u>			
Revolving fund			51,621
Manufacturing-milk shippers			9,207
Market-milk shippers			60,828
Undistributed proceeds (June 30, 1945)			
Manufacturing-milk shippers		14,206	
Market-milk shippers		21,366	
		35,572	113,603
Total			249,330

1870. Oct. 25. - *Leucostoma* sp.
S. W. of town of Laramie, Colorado.

Leucostoma sp.

Spores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

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Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Basidiospores 10-12 μ long.

Walls 1.5-2 μ thick.

Apex rounded.

Operations of Point Reyes Dairymen's Association

Milkfat Received.--The total volume of milkfat received from members showed a steady growth between 1934-35 and 1944-45 (table 13). Significant changes, however, have taken place in the form in which this milkfat was received. In 1933-34, about 70 per cent of all milkfat received was in the form of manufacturing cream, the balance in manufacturing milk. Market milk was received from members for the first time in 1937-38, when market milk accounted for about 10 per cent of all milkfat received, market cream for about 60 per cent, and manufacturing milk for the rest. In 1944-45, market milk accounted for just over 50 per cent of all milkfat, and manufacturing milk for about 42 per cent. Manufacturing cream had shrunk to a mere 4 per cent.

During the last six months of 1945, the association received from its members 13,400 pounds of milkfat in manufacturing cream, compared with 12,300 pounds during the same period of the previous year. Manufacturing-milk producers, however, delivered only 125,500 pounds of milkfat compared with 175,000 pounds the same period of the previous year. Shipments of milkfat in market milk increased from 239,400 in the months June-December, 1944, to 307,200 in the period June-December, 1945. These figures thus indicate that the trend away from manufacturing milk and cream and toward market milk is still under way.

Membership.--The number of active members in the association increased fairly steadily from 74 in 1934-35 to 120 in 1944-45. In the latter year, however, the association lost 63 members and gained no new members. At the end of 1944-45, its membership had thus declined to 57 -- a loss of over 50 per cent. In February, 1945, a total of 18 shippers of market milk and 26 shippers of manufacturing milk and cream indicated a still further decline in active membership. The position of the Point Reyes Dairymen's Association in this respect appears to be less satisfactory than that of the Bodega Coöperative Creamery Incorporated (table 14).

Table 15 shows the size of herds of market-milk and manufacturing-milk shippers in February, 1946. Although in February only 18 members were shipping market milk, 22 shippers were included in Table 15. Four dairymen now shipping manufacturing milk are equipped or are equipping their ranches to ship market milk. There are an average of 130 cows (in milk and dry) in the market-milk herds. The smallest herd had 46 cows and the largest, 260.

The average size herd of manufacturing-milk shippers is much larger than that of shippers to the Bodega Coöperative Creamery Incorporated. Only 4 herds had less than 26 cows. On the other hand, there were 7 herds of 100 cows or more.

Practically all the dairymen shipping milk to the association are located in Marin County, the majority being along the coast or around Tomales Bay. The membership is thus fairly well concentrated, an important factor in a hilly area with winding country roads.

Financial Aspects.--The annual volume of sales increased from \$635,000 in 1941-42 to \$1,065,000 in 1944-45, an increase of nearly 70 per cent. This rise is due in part to an increase in the total volume of milk and milkfat handled, in part to a change in the type of products sold, and in part to a general rise in prices of all dairy products (table 16).

The total volume of milkfat handled increased from 1,039,000 pounds in 1941-42 to 1,199,000 pounds in 1944-45. More important, however, was a shift in

2000 ft. above sea level - 10° C. at 1000 ft. above sea level

1000 ft. above sea level
1000 ft. above sea level

1000 ft. above sea level - 10° C. at 1000 ft. above sea level

1000 ft. above sea level - 10° C. at 1000 ft. above sea level

TABLE 13
 Point Reyes Dairymen's Association
 (Deliveries of Milkfat by members)

Fiscal year	Manufacturing cream (1,000 pounds)	Manufacturing milk (1,000 pounds)	Total manufacturing milk and cream (1,000 pounds)	Market milk (1,000 pounds)	Total manufacturing and market and market (1,000 pounds)
1934-35	580	242	822	0	822
1935-36	592	271	863	0	863
1936-37	553	233	786	0	786
1937-38	610	270	880	99	979
1938-39	567	359	926	71	997
1939-40	540	325	865	139	1,004
1940-41	479	384	863	174	1,037
1941-42	314	505	819	220	1,039
1942-43	187	589	776	340	1,116
1943-44	105	525	630	449	1,079
1944-45	51	508	559	641	1,200

Source of data:

Compiled from the records of the Point Reyes Dairymen's Association.

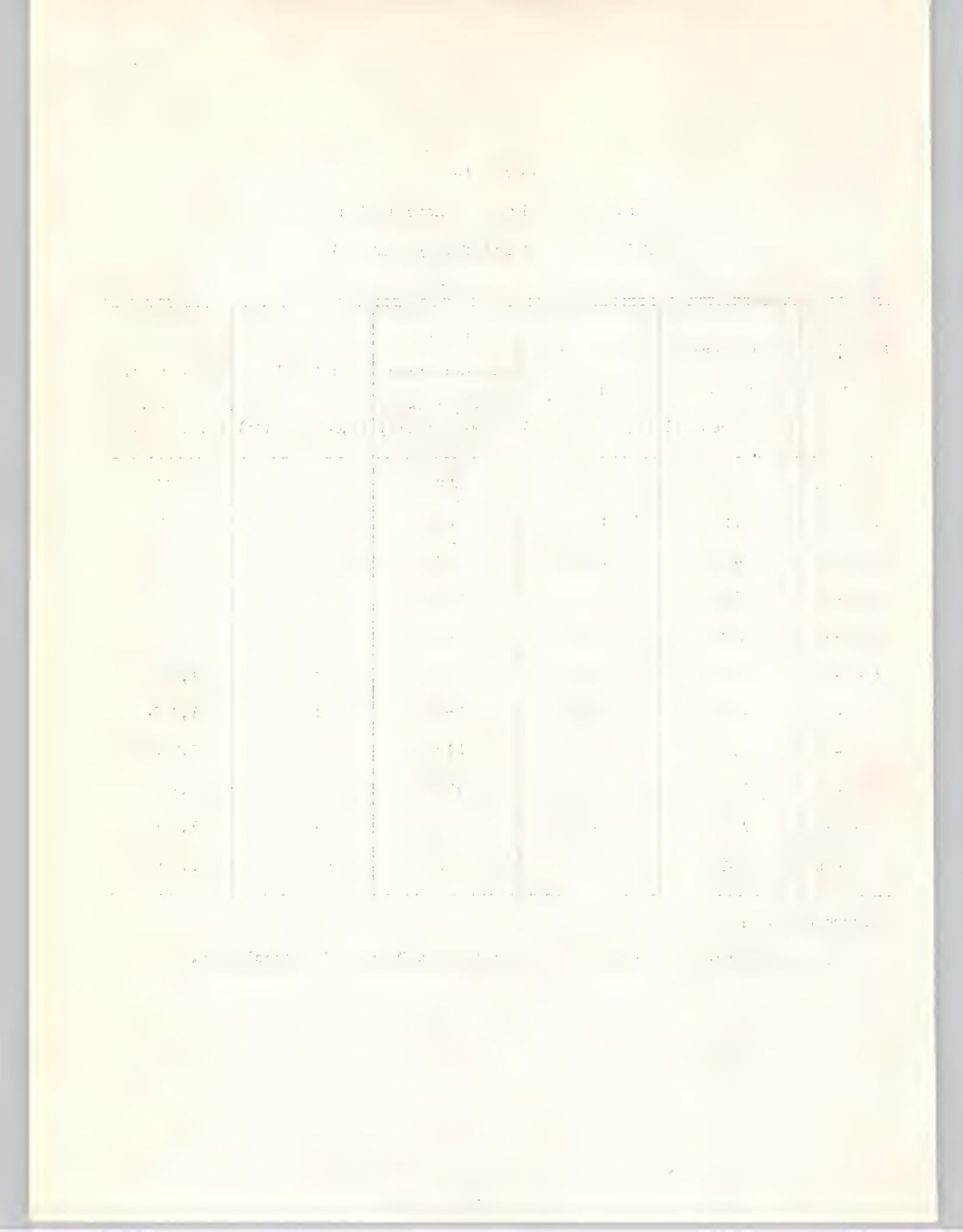


TABLE 14
 Point Reyes Dairymen's Association
 (Common Stockholder's Membership Gains and Losses
 For Each Year)

Fiscal year	Number at beginning of year	Loss during year	Gain during year	Number at end of year
1934-35	85	11	0	74
1935-36	74	7	0	67
1936-37	67	2	0	65
1937-38	65	3	12	74
1938-39	74	5	10	79
1939-40	79	14	25	90
1940-41	90	4	16	102
1941-42	102	6	15	111
1942-43	111	6	11	116
1943-44	116	2	6	120
1944-45	120	63	0	57

Source of Data:

Compiled from the records of the Point Reyes Dairymen's Association.

TABLE 15

Point Reyes Dairymen's Association

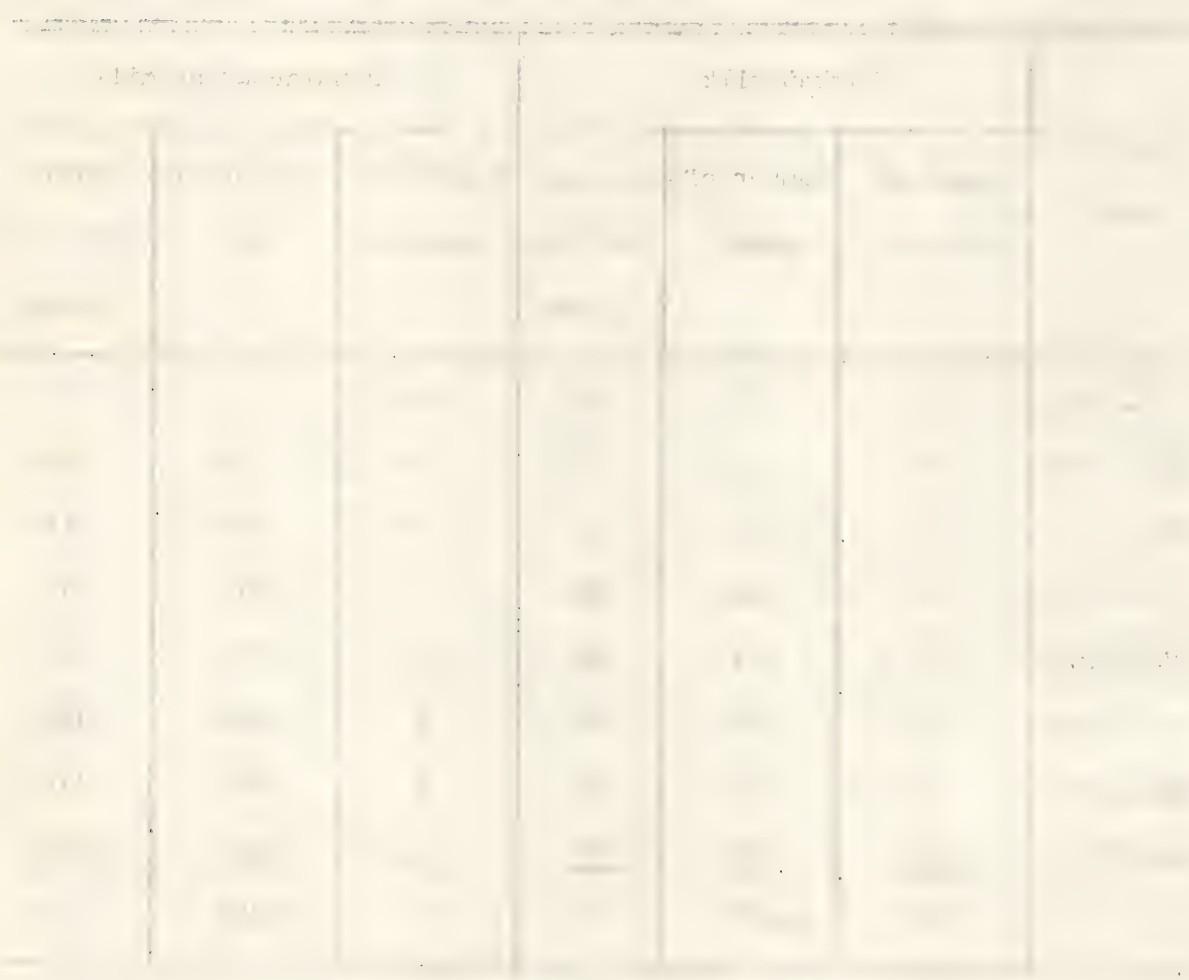
(Number of Dairy Cows in Herds of Shippers, February, 1946)

Size of herd	Market milk			Manufacturing milk		
	Number of shippers	Number of cows	Average for size group	Number of shippers	Number of cows	Average for size group
0 - 10	0	0	0	2	15	7
11 - 25	0	0	0	2	33	16
26 - 50	1	46	46	7	298	43
51 - 75	5	312	62	3	217	72
76 - 100	3	251	84	4	370	92
101 - 150	5	678	138	2	259	129
151 - 200	5	903	181	4	705	176
over 200	<u>3</u>	<u>680</u>	<u>227</u>	<u>1</u>	<u>300</u>	<u>300</u>
	22	2,870	130	25	2,197	84

Source of Data:

Compiled from the records of the Point Reyes Dairymen's Association.

(This chart will help to show the effect of the policy.)



(This chart will help to show the effect of the new policy.)

the types of products handled. In 1941-42, butter accounted for nearly 45 per cent of the total proceeds of sales, cheese for 21 per cent, by-products for 6 per cent, and market milk for 27 per cent. In 1944-45, butter accounted for only 24 per cent of the total value of sales, cheese for only 5 per cent, and by-products for 12 per cent. The importance of market milk had grown to 58 per cent of total sales.

The average annual advances per pound of milkfat made to members are shown in the following statement:

<u>Shippers of</u>	<u>1941-42</u>	<u>1942-43</u>	<u>4/1943-44</u>	<u>4/1944-45</u>
Manufacturing cream	40.91¢	48.46¢	50.03¢	48.22¢
Manufacturing milk	55.31	63.00	63.92	66.62
Market milk	79.20	87.27	93.75	93.58

This association has not departmentalized its expenses, and a segregation under the headings of operating expenses, general, and overhead, was made only for the last two years. For this reason, all expenses are grouped together in Table 18 under the heading "Operating Expenses." Total operating expenses increased from \$63,108 in 1941-42 to \$81,347 in 1942-43, dropped to \$64,429 in 1943-44, and again increased to \$73,069 in 1944-45. It is difficult to make a detailed analysis of these expenses to determine whether and to what extent the association has effected economies in its operations. It is known, of course, that wages and the cost of supplies rose appreciably during the war years. An increase in volume of products handled would also presuppose some increase in total costs. On the other hand, the shift in the relative importance of types of products handled (from butter and cheese to market milk) should work in the direction of lower total operating costs because market milk requires no processing.

It is safe to assume that unit costs of manufacturing butter and cheese were very much higher in 1944-45 than in 1941-42; first, because of a rise in cost factors, and second, because of a considerable decline in volume of output of butter and by-products. Less efficient use was made of plant and facilities. The situation has since deteriorated still further because of the continued decline in volume of manufacturing milk and cream received by the association.

The net operating income of the association fluctuated considerably in the four years. It increased from \$14,042 in 1941-42 to \$42,049 in 1942-43, declined sharply to \$13,775 in 1943-44, and then increased to \$30,678 in 1944-45. Other nonoperating income increased rapidly from \$273 in 1941-42 to \$18,453 in 1944-45. The importance of total net income arises from the fact that this amount is available for payments of bonuses to producers on milkfat delivered and, if necessary, for building reserves. The association attempts to meet the monthly prices paid by competitors for various grades of milkfat and plans on prorating back to members any savings effected on each year's operations. During the last two years, the association has been unable to pay a bonus to its members as high as that paid by the Petaluma Coöperative Creamery. This fact was largely responsible for the withdrawal of so many members during 1944-45. If the association continues to operate as at present, it will find continually more difficult the meeting of prices paid concurrently by competitors, and even more difficult the providing of satisfactory bonuses at the end of each year.

4/ These figures do not include federal subsidy.

TABLE 16

Point Reyes Dairymen's Association
(Income and Expenses)

	1941-42		1942-43		1943-44		1944-45	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
<u>Proceeds of Sales</u>								
Butter (pounds)	774,601	289,492	742,701	352,661	449,414	221,633	582,851	255,172
Dried non-fat-solids (pounds)	352,591	26,526	920,870	75,429	253,203	22,295	861,879	119,538
Cheese (pounds)	575,771	135,430	452,555	122,533	572,605	158,305	195,601	54,690
Casein	---	—	72,277	10,730	108,137	20,505	13,184	3,141
Market milk (pounds milkfat)	219,707	174,010	339,904	323,012	449,258	462,231	640,827	622,069
Miscellaneous	---	9,306	---	12,191	32,516	—	11,226	
Change in inventory		634,764		896,556		917,485		1,065,836
Freight		+ 6,789		-12,546		- 577		+ 3,403
		641,553		884,010		916,908		- 3,083
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<u>Payments to producers</u>								
Milkfat in cream (pounds)	313,222	128,109	186,718	90,473	105,282	52,680	50,689	24,442
Milkfat in manufacturing milk (pounds)	506,357	280,059	589,553	371,433	524,962	335,606	507,876	338,360
Milkfat in market milk (pounds)	219,707	156,235	339,904	298,708	449,258	450,418	640,827	599,669
	1,039,286	564,403	1,116,175	760,614	1,079,502	838,704	1,199,392	962,471
<u>Operating expenses</u>								
Manufactured products		49,069		64,730		64,429		62,256
Market milk (including freight)		14,039		16,617				
Overhead expense		63,108		81,347		64,429		10,811
								73,067
Payments to producers plus operating costs		627,511		841,961		903,133		1,035,538
Net operating income		14,042		42,049		13,775		30,678
Other nonoperating income		173		1,785		2,055		18,453
Total net income		14,315		43,834		15,830		49,131

Source of data: Compiled from records of the Point Reyes Dairymen's Association.

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111. 20100

Balance Sheet.--As of June 30, 1945, current assets exceeded current liabilities by about \$4,000, to which may be added \$5,085 prepaid insurance and supplies inventory. However, in view of the fact that it is customary for the association to pay to patrons most of the undistributed proceeds of operations for the year (\$49,131 at the end of 1944-45), the ratio of current assets to current liabilities was not too satisfactory. Long-term investments in Challenge Cream and Butter Association and stock held in the Berkeley Bank for Coöperatives amounted to \$64,628. Fixed assets in land, buildings, and equipment depreciated more than two thirds and stood at \$40,215 (table 17).

The equity of patrons and stockholders in the association amounted to \$114,196, of which only \$30,701 is evidenced by preferred and common stock.

In view of the appreciation in the value of land and buildings in recent years, the association should be able, in the event of liquidation, to realize more than the present book value shown for land, buildings, and improvements. It is probable, too, that the current market value of trucks, office furniture and equipment, and milk cans will equal, if not exceed, the book value of these assets. The only loss that may occur, therefore, would be on sale of machinery and equipment. Most of the machinery and equipment appears to be in very good shape and, in view of present scarcities and high prices, could probably be sold at prices not greatly below their book value. It is probable, therefore, that in the event of liquidation, the association will be able to meet its obligations to stockholders and patrons to very nearly 100 cents on the dollar.

Conclusions and Recommendations

Conclusions.--The analysis of consumption trend of dairy products and utilization of milkfat in California indicated that butter production in California has declined consistently in the state since 1924, the rate of decline being greatly accelerated since 1940. With the tremendous growth of population since 1940 and the high level of buying power, consumption of market milk, cottage cheese, and ice cream has soared. Increased consumption of market cream has been held in check by shortage of supply and by wartime control measures. If population continues to increase, even at a slower rate, distributors of market milk and market cream and processors of ice cream and cottage cheese will find increasing difficulty in securing/supplies of milk to meet their requirements. The prospects of greatly increased output of milk in California are not too bright, at least for the next year or two.

Under the circumstances, distributors and processors of these four products will go farther afield for supplies of milk. They will offer inducements of every possible kind to producers who are within reasonable distance of the larger population centers, to equip themselves for the shipping of market milk and market cream.

Although the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association were originally organized to manufacture butter, cheese, and by-products, both associations since 1940 have shipped an increasingly large proportion of their milk to the East Bay cities in the form of market milk -- so much so, that in 1944-45 over half of their volume of milkfat was shipped as market milk. Because of the decline in volume of manufacturing milk and cream manufactured into butter and by-products, unit costs of operation have risen appreciably and the two associations have experienced increasing difficulty in paying to their patrons returns equal to those paid to dairymen by their competitors. This, during the last two or three years, has caused considerable dissatisfaction among both manufacturing- and market-milk patrons. Shippers of

TABLE 17

Point Reyes Dairymen's Association

(Condensed Balance Sheet, at June 30, 1945)

ASSETS				<u>dollars</u>
<u>Current assets</u>				
Cash on hand and in bank				43,218
Accounts receivable				13,390
Trade acceptances receivable				55,016
Inventory -- products				6,871
				<u>118,495</u>
<u>Investments</u>				
Challenge Cream and Butter Association (membership, certificates of interest, and revolving fund)				34,228
Stock -- Berkeley Bank for Co-operatives				400
				<u>34,628</u>
<u>Fixed Assets</u>	<u>Cost</u>	<u>Accumulated depreciation</u>	<u>Net Value</u>	
Land	900	---	900	
Buildings and improvements	31,918	27,665	4,253	
Machinery and equipment	98,567	73,087	25,480	
Trucks	2,398	1,721	677	
Office furniture and equipment	2,435	1,664	771	
Milk cans	11,008	2,874	<u>8,134</u>	
	<u>147,226</u>	<u>107,011</u>		40,215
Other assets and prepaid expenses				5,085
Total				<u>228,423</u>
<u>LIABILITIES</u>				
<u>Current liabilities</u>				
Accounts payable				4,128
Taxes payable				1,300
Note payable -- Bank of America				10,000
Advance payable -- patrons				98,799
June deliveries				<u>114,227</u>
<u>Capital</u>				
Preferred stock -- nonvoting			27,490	
Common stock (and purchase credits)			3,211	
Reserve for special purposes			3,108	
Patrons equity reserve			31,256	
Undistributed proceeds, year ending June 30, 1945			<u>49,131</u>	114,196
Total				<u>228,423</u>

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manufacturing milk consider that shippers of market milk are not contributing sufficiently to the operations of the associations. Market-milk shippers, on the other hand, claim that they are being penalized by having to contribute toward the expenses of manufacturing butter and other products. The large decline in membership (especially of manufacturing-milk producers) in both associations during 1944-45 was the outcome of this general dissatisfaction.

The decreased volume of manufacturing milk now being delivered to both associations will serve merely to aggravate the situation. Both associations have a plant equipped to handle two and three times the volume of manufacturing milk now available. Expenses of upkeep continue, regardless of volume handled. Unit costs of processing are bound to rise. It is significant that both associations have had so little manufacturing milk since December last that only one or two churningings have been made.

Another cause for dissatisfaction among manufacturing-milk shippers is the fact that the associations have continued to manufacture butter or cheese, skim milk, and casein when more profitable manufacturing milk outlets (particularly cream for ice cream and cottage cheese) have been available. The boards of directors admit that other manufacturing outlets would net higher returns, but draw attention to the fact that their associations are under contract to ship all their products through Challenge Cream and Butter Association. This association, for various reasons, has been unable to handle ice cream and cottage cheese in its Oakland and San Francisco plants and has urged the two associations to induce more members to equip themselves to ship market milk.

It is safe to conclude that the Bodega Coöperative Creamery Incorporated and the Point Reyes Dairymen's Association are fighting a losing battle if they continue to operate as they have in the past few years. Dissatisfaction will continue to grow among both market-milk and manufacturing-milk shippers. As conditions stand, both associations may expect to lose many members at the end of this year -- unless prospects for the future are greatly improved. A further decline in membership will see both associations either operating at a loss or paying to producers considerably lower returns than are paid by competitors to their patrons.

There appears to be little prospect of a comeback for butter manufacture in the state. Even if there is some recovery in the relative importance of butter manufacture, both associations are so close to the Bay cities that their output should logically go to those cities in the most profitable forms -- market milk, market cream, manufacturing cream for ice cream, and cottage cheese.

If either or both associations continues to operate as at present, failure within the next year or two seems unavoidable. The situation calls for drastic reorganization. Several plans of reorganization are recommended below, together with the apparent advantages and disadvantages of each. Final decision as to which, if any, of the recommended plans is adopted, of course, rests with the directors and membership of the two associations. In submitting these recommendations, the authors are guided primarily by considerations for the welfare of the two associations.

Discontinuation of Both Associations

Plan No. 1.--This plan would call for early cessation of operation of the two associations -- say at the end of the current fiscal year. The two associations would go into liquidation. Plant and equipment would be sold to best advantage.

No new association would be formed. Members of the two associations would be free to seek other markets for their milkfat. These would include the Petaluma Coöperative Creamery or independent operators in the area.

The main advantages of Plan No. 1 would be that:

a) Members would be assured higher returns for their milkfat, at least for the time being, than they would be likely to receive if they continue to support the two associations under existing conditions.

b) Immediate sale of land, buildings, and equipment would net higher returns than are likely to be obtained within a year or two, when the equipment-supply situation is improved.

The chief disadvantages of Plan No. 1 are:

a) The members situated in the more outlying parts of the territory served by these two associations would have no assurance of being served by a coöperative association. The Petaluma Coöperative Creamery, which already has a large membership, may be now, or at some time in the future, unwilling to serve producers who are outside of its main territory. Experience in the past has shown that in areas not served by coöperative associations, producers have been subjected to trade and other practices which have been to their disadvantage.

b) Many dairymen would regard the absence of a coöperative association in their area as a distinct loss. Coöperative associations have served as more than a mere business agency to handle members' products. It is a community organization that fosters public spirit. Members of coöperative organizations are usually eager to serve on boards of directors of their associations. It gives them prestige in their community and the satisfaction of rendering public service. So deeply are many farmers imbued with the coöperative principle that they would willingly accept lower returns on their products, rather than be without an association.

c) The plan involves a loss of volume to the Challenge Cream and Butter Association. Both the Bodega and the Point Reyes associations have been members of Challenge for many years and have benefited from its growth and operations. Although they have been critical of the operations and policies of Challenge, many directors of the two associations consider that continued affiliation with Challenge would be to their advantage as well as to the advantage of the dairy industry as a whole.

d) The loss of the market milk shipped by the two associations would seriously embarrass the Challenge Cream and Butter Association in its operation of the San Francisco and Oakland plants.

e) It would make no provision for employees of the two associations, many of whom have served the associations faithfully for several years.

Merging of Operations

Plan No. 2.--This plan would call for merging the manufacture of butter, cheese, and other by-products in only one plant. Under such a plan it would be more logical to operate the Point Reyes plant, as it is in better condition than that of the Bodega creamery. Moreover, it is nearer the Bay cities and thus would involve less crosshauling than if all manufacturing milk and cream were hauled to Bodega. If Plan No. 2 is followed, the Bodega plant could be operated merely as an assembly station. All unnecessary equipment could be sold.

Actually, neither plant is strategically located. Erection of another plant in a more strategic location would be expensive and would involve losses in the sale of equipment at the present locations.

Market milk would continue to go to Challenge as at present.

The advantages of Plan No. 2 would be that:

a) Both associations would continue to operate as separate entities, but operating costs on manufactured products would be reduced by operating only one plant.

b) Most of the personnel of the two associations could be retained.

The disadvantages of Plan No. 2 are:

a) As stated above, neither of the two plants is suitably located to handle the milk of all dairymen now served by the two associations. Erection of a plant in a more suitable area would be expensive.

b) Conflict of interest between market-milk and manufacturing-milk producers would not be eliminated.

c) A satisfactory division of expenses between the two associations would be difficult to work out.

d) The plan would not overcome the fact that the manufacture of butter and cheese is not the most profitable outlet for manufacturing milk in the area. The situation could be improved if Challenge would accept manufacturing cream and cottage cheese for sale in the Bay area.

e) If more members equipped their ranches to ship market milk, it would merely mean postponing the evil day. Within a few years, the volume of manufacturing milk will decline to a point where processing costs will be so high that the associations will be unable to make satisfactory returns to their members.

f) Many members of the two associations will be opposed to such a merger of manufacturing operations.

Dissolution of Old Associations and Formation of New Bargaining Association (For both market milk and manufacturing milk)

Plan No. 3.--This plan would involve closing the two existing plants, sale of all land, buildings, machinery and equipment, liquidation as rapidly as possible of the two existing associations, and formation by the present members of the two associations of a new coöperative bargaining association to arrange for the sale of both market milk and manufacturing milk.

The market milk could be sold, as at present, through the Challenge plants in Oakland or San Francisco, the manufacturing milk in bulk to Challenge, the Petaluma Coöperative Creamery, or whatever other satisfactory outlet may be available. Tentative inquiries at the office of the Petaluma Coöperative Creamery have indicated that this organization would be willing, if not eager, to obtain an increased volume of manufacturing milk.

The advantages of Plan No. 3 are:

a) Continued operation of a coöperative association in the area now served by the two associations.

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b) Continued supply of market milk for Challenge.

c) Higher returns for manufacturing milk producers because

(1) Manufacturing milk will be used in more profitable manufactured products, such as ice cream and cottage cheese.

(2) The cost of processing will be greatly reduced. There will be no processing costs for the new association and lower processing costs through new sales outlet.

(3) Overhead costs will be lower as a result of the combination of volume of the two associations into only one bargaining association.

d) Higher returns for market-milk producers because of spread of total costs over a larger volume.

e) The new association will be able to continue work to induce manufacturing-milk producers to equip themselves to handle market milk.

f) More economical arrangements could be made for the collection and hauling of members' milk.

g) Some, at least, of the employees of the two existing associations could be used by the new association on management and field work. It appears highly desirable for the new association to undertake a well-rounded and permanent program for improving membership relations.

h) The head office of the new association could be located at a more centralized and convenient place.

The disadvantages of Plan No. 3 are:

a) The services of many of the employees of the two existing associations would have to be dispensed with.

b) There may still be some conflict of interest between manufacturing-milk and market-milk producers. Separate outlets for the milkfat of the two groups of producers should be stressed, however. It would thus be possible to segregate returns. As the new association will serve merely as a bargaining association, both groups would probably contribute equally (on a milkfat basis) toward overhead and administrative expenses.

c) Fewer dairymen would be required to serve on the board of directors of a single association than is true at present.

d) The Petaluma Coöperative Creamery and private operators in the area may be unwilling to coöperate in an arrangement that may result in loss of a large volume of manufacturing milk at some time in the future. This difficulty could possibly be overcome by a contract to guarantee supply for a year or more.

Dissolution of Old Associations and Formation of New Bargaining Association (For market milk only)

Plan No. 4.--This plan is similar in all respects to Plan No. 3, except that the new bargaining association would be confined to market-milk producers only. Manufacturing-milk producers would be free to open new market outlets for their milkfat.

The advantages of Plan No. 4 are:

- a) There would be no possibility of conflict between market-milk and manufacturing-milk producers.
- b) Manufacturing-milk producers would be able to secure a ready market for their product at the present time. For instance, the Petaluma Coöperative Creamery has indicated that it would welcome additional manufacturing milk.
- c) Overhead costs for the new association would be reduced, but probably not as much as would be true if it handled manufacturing milk as well.
- d) Other advantages would be the same as for Plan No. 3.

The disadvantages of Plan No. 4 are:

- a) Overhead and administrative costs would probably be somewhat higher than under Plan No. 3.
- b) The new association would not be assured of the volume expansion of market milk from manufacturing-milk producers, who may equip their dairies during the next year or two.
- c) Challenge would not be assured of a volume of manufacturing milk for its Oakland and San Francisco plants, should it in the near future be in a position to handle ice cream and cottage cheese.
- d) Disadvantages a) and c) of Plan No. 3 would also apply to Plan No. 4.

The authors consider that, if the coöperation of all parties can be obtained, Plan No. 3 offers the best prospects for successful operation in the future.

